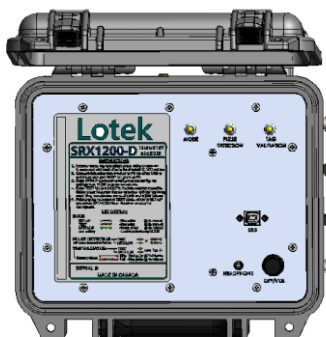


# Lotek

## SRX1200 Host User Guide



## USER MANUAL

REVISION 02  
26 JAN 2023  
#MVHF018

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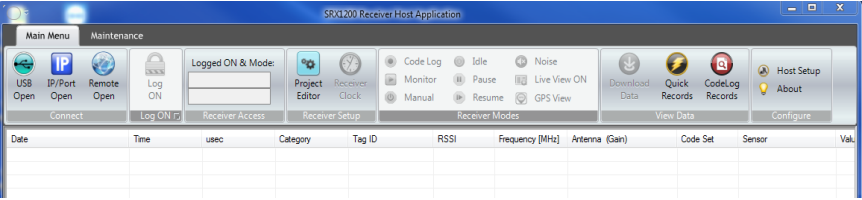
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# 1. Introduction



This document provides installation and operating instructions for the SRX1200 Host Software (hereafter referred to as 'Host'). It is designed to allow you to program your receiver to monitor and/or data log VHF transmitters, as well as download data based upon the features of your SRX1200 Model. It is highly recommended that you also review the SRX1200 User Guide for operation instructions.

**NOTE:** The SRX1200 Host Application is only compatible with Windows-based operating systems.

## 2. Installation

### 2.1. SRX1200 Host Program Installation

Installation of the Host is a quick procedure. The latest SRX1200 Host software will be provided to you on a USB Memory Stick with the Lotek logo. You can also contact Lotek Customer Support if you do not receive the USB stick, or have misplaced the USB stick.

Double-click on the latest SRX1200 Host Install app to initiate the installation process. Most of the windows and prompts that are issued during the installation are self directing.

The Host is not a large application and there are no options for installing medium or compact components. You are asked to read and acknowledge the Lotek end-user license agreement.

You may wish to alter the installation directory and also the target position of the short cut that will be placed in the Windows program start menu. The most likely choices have been offered as defaults:

**Program location:** C:\Program Files (x86) \Lotek Wireless Inc\SRX1200 Host\

**Program Folder:** Lotek Wireless Inc \ SRX1200 Host

Once the options have been adjusted OR defaults have been accepted, the program files are copied to the target directory. You will be informed once the process is complete.

At this point, you should find that the requested program directory has been created. Under the program directory, sub directories have also been created. Those are, Data, Projects and System. If this is a first-time installation, Data and Projects should be empty.

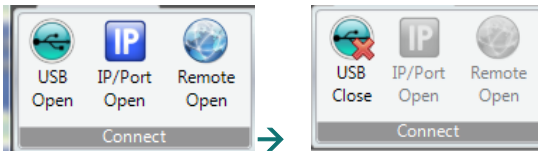
## 2.2. USB Communication Port Setup

Host installation will also copy the required USB drivers on to the PC to enable connection between the receiver and the Host Software on your PC.

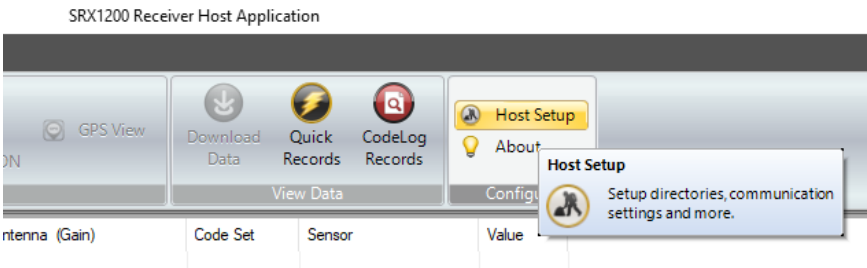
1. Once the Host has been installed successfully, connect the provided USB cable to the back of the receiver (M-models, faceplate for D-models) and connect the other end to a USB port on your PC. Once it is securely connected, turn on the receiver via the knob.
2. The PC will acknowledge the USB as a new hardware device being connected to the system. You can now open the Host software on your PC.

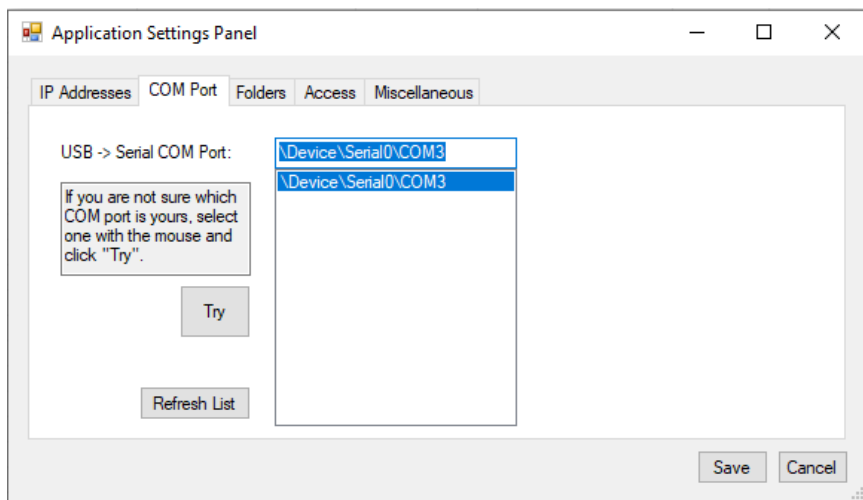
**NOTE:** If your computer does not recognize the receiver via the USB port, detach the USB cable from the USB port on the computer, and try another USB port on your computer.

3. Click on the USB Open Button under the Main Menu > Connect section, If your receiver connects successfully, the button will switch to "USB Close".



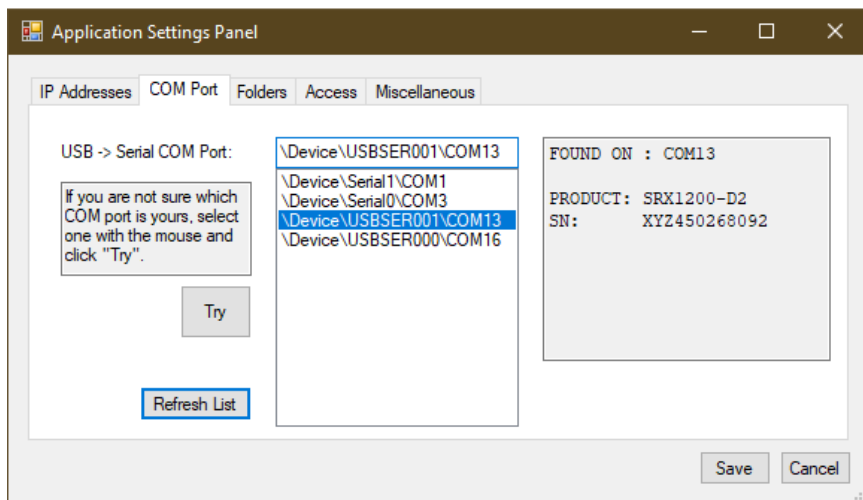
4. If your Host does not recognize the receiver, click on the Host Setup button under the Main Menu > Configure section. This will open up the Application Settings Panel. Under the COM Port tab, select the device/serial COM Port that corresponds to your receiver. Once selected, click Save. Repeat Step 3.





## 2.2.1. Troubleshooting

1. You can click on the Refresh List button to update the list of available COM Ports.
2. You can click on the Try button after selecting a serial port, if you are unsure which serial port corresponds to your receiver.



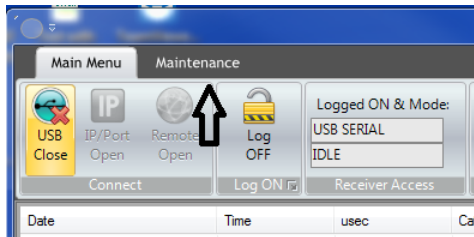
## 2.3. WIFI communication set up (D2, MD2)

**NOTE:** In order to set up a remote WIFI connection, both the receiver and the computer must be using the same WIFI access point.

To set up your WIFI communication settings, the receiver must be connected via USB to the computer, powered up and logged on to the Host. The WIFI antenna must be attached to your **SRX 1200 D2 or MD2 receiver**.

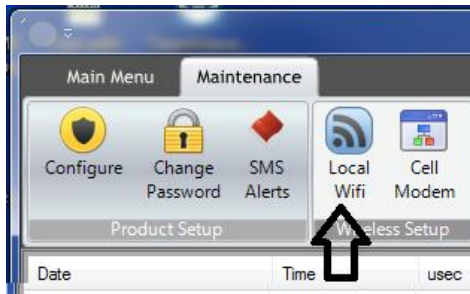
### Step 1.

Select the Maintenance tab indicated by the black arrow below:



### Step 2.

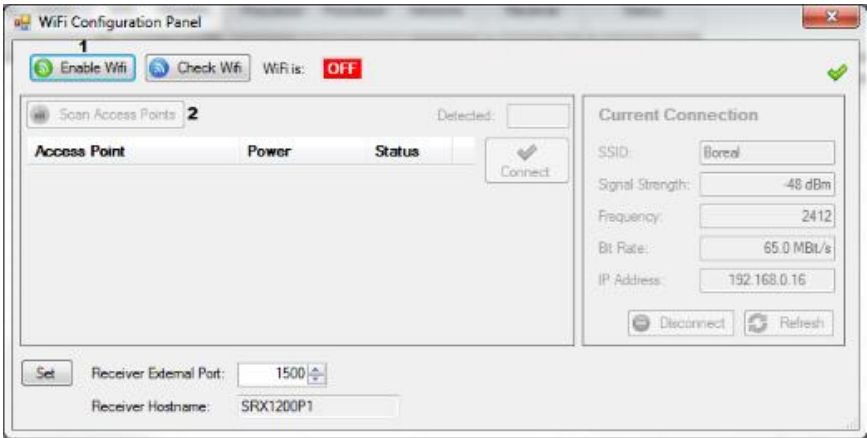
Select local WIFI in the Wireless Setup section of the maintenance tab:





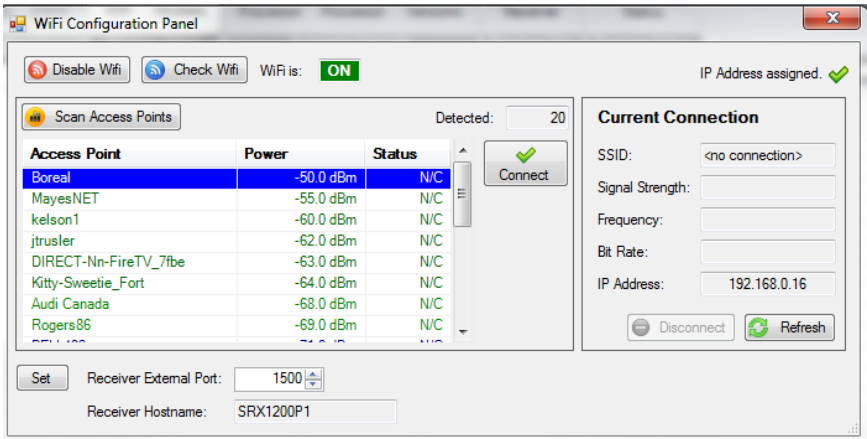
### Step 3.

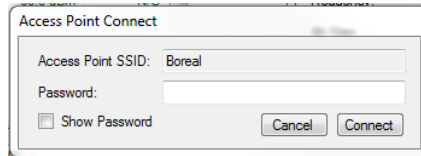
In the WIFI Configuration Panel click on Enable WIFI (1) then select Scan Access Points (2):



### Step 4.

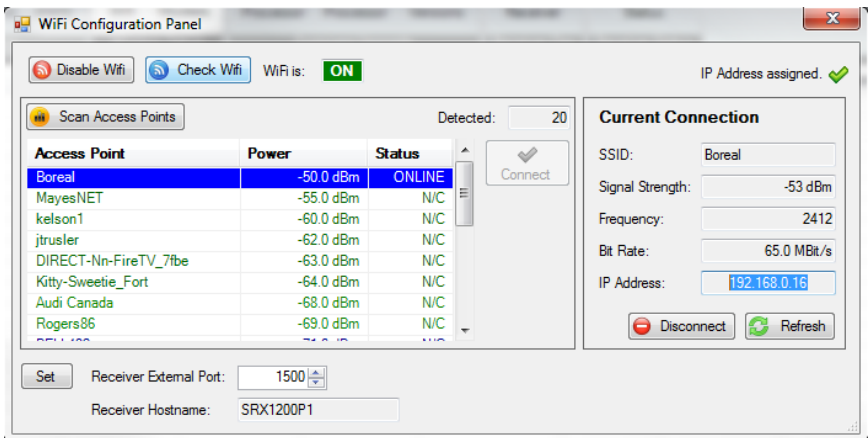
A list of all local WIFI access points that your receiver can utilize will appear as below. Select your local WIFI network and then click on the “Connect” button. It will then ask for your SSID password. Enter the password and click “Connect”.





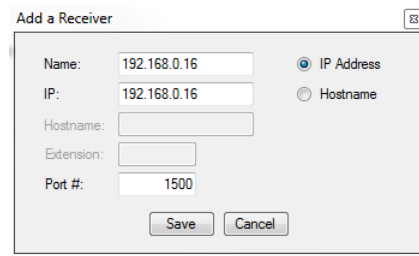
## Step 5.

Click on the set button and copy the IP address highlighted in the Current Connection section. Then, click on the "x" to exit the WIFI Configuration Panel.



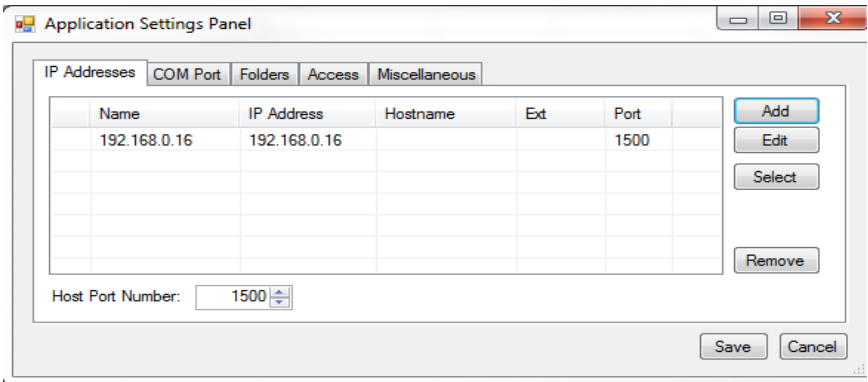
## Step 6.

Click the Main Menu tab then "Host Setup" icon. The Applications Settings Panel should appear. In the IP Addresses tab click on "Add" the "Add a Receiver" panel will appear. Here, paste the IP address you just copied into the Name and IP as shown below. Then click on the "Save" button.



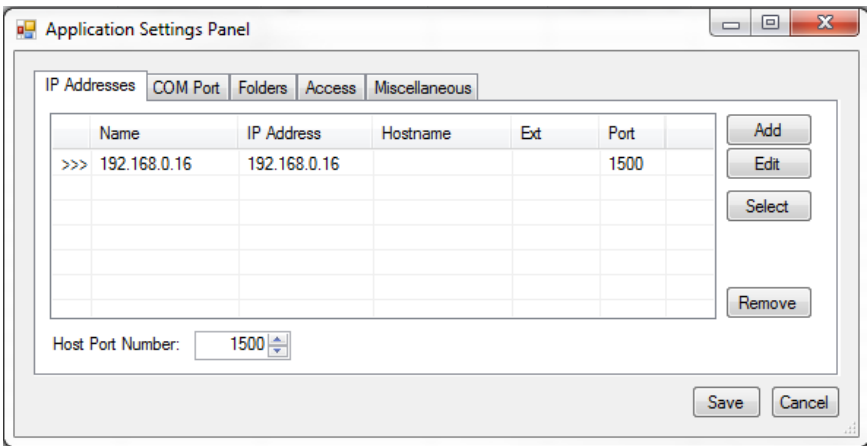
## Step 7.

Make sure you also have the same Port # from the WIFI Configuration Panel.



## Step 8.

Your receiver's connection will appear in the IP Addresses window to make it active. Double click the IP address line.



## Step 9.

Upon your double click, you will now see “>>>” on the left side of the line appear. If they DO NOT appear please repeat step 8.

## Step 10.

Click on Save and you are ready to connect using WIFI Remote. Log Off from the USB then select “USB Close”. At this point, please test your WIFI connection to ensure connection by selecting and clicking on “IP/Port Open” (shown below). Log ON and you should have complete access to all your SRX 1200 functions.



## 3. Getting Started

The Host program's primary functions vary depending on your receiver model.

**FOR THE M1 MODEL** – You can use the SRX Host Keypad LCD feature to program your receiver in place of using the manual keypad on the physical receiver.

**M2, MD1, MD2, D1 and D2** – You can setup the project configuration of the receiver and to download data from the receiver. The Host also supports real time detection display and can support remote control via WIFI of the D2 and MD2 models.

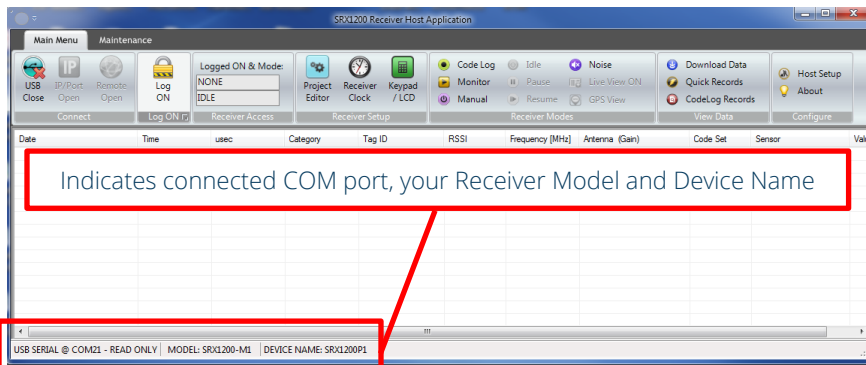
The following section provides an overview of the main menu functions and associated toolbar buttons. Detailed descriptions are deferred to subsequent sections where necessary.

### 3.1. Host Main Menu Setup

Following the successful connection between the SRX1200 receiver and the SRX1200 Host on your PC, launching Host presents the setup menu window below. The Main Menu tab allows you to program and access receiver configurations, as well as GPS and remote download connection.

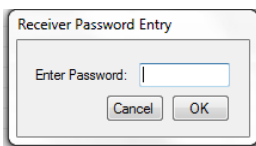
The 'Receiver Maintenance' tab provides access to 'background' operations such as WIFI connections, installed codesets and battery status.

Positioning your mouse arrow over an icon prompts a brief description of the actions that can be accessed under that icon.



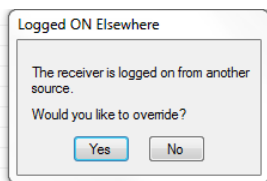
## 3.2. Logging On

Click on the “Log On” button. A box will appear asking for a password. The default factory password is “123456”



Once you are Logged On, the button will change to “Log Off” and the Receiver Access boxes will be populated.

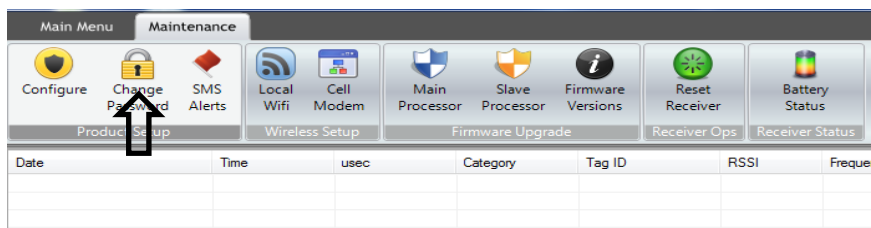
If you are “logged on” the physical receiver, you will see the message box (shown below).



By clicking on the “Yes” button you can override the receiver “Log On” and be logged on via the host. This will allow you full access to change the functions and settings of the receiver.

If you wish to change this password to restrict access to your data, you must be logged on to your receiver.

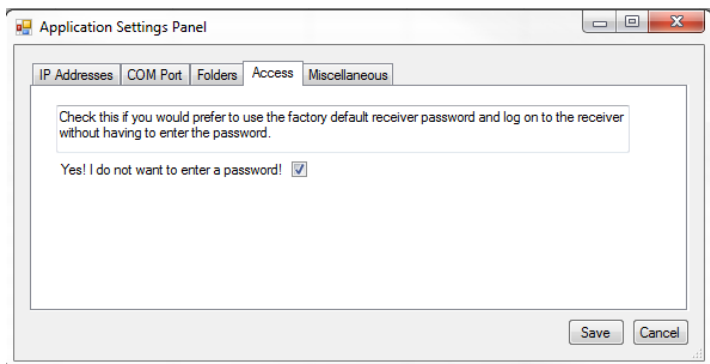
To accomplish this, go to the Maintenance Menu Tab, and click the Change Password icon. You will now be able to enter a new password and save it to your receiver.



A dialog box titled 'Change Password' with a close button in the top right corner. It contains two text input fields: 'Current Password:' and 'New Password:'. Below the fields are two buttons: 'Cancel' and 'OK'.

It is highly recommended to **note this password down** as you will **not** be able to access the receiver or make changes without using the new password to log on.

**NOTE:** If you would like to avoid entering your password every time you Log On to the Host, navigate to the Access Tab of the Host Setup icon. Check the box where it says "Yes! I do not want to enter a password", this will save your default password to expedite the log on process. This will only work if the factory default is not changed.



This feature should **ONLY** be used if your receiver is always in a secure setting such as manually tracking or in a secured area if datalogging.

### 3.3. Keypad Simulator

If you are connecting the Host to a Manual SRX1200 receiver (**M1, M2, MD1, MD2**), you can use the Keypad Simulator instead of pressing the physical keys on the receiver. In order to make changes to the receiver, log onto the receiver via the virtual keypad (mimicking the physical keypad), and not through the Host Log on Option (i.e. do not log in using the above mentioned steps in section 2.2).



KeyPad LCD Panel

U	S	E	R	:		U	S	B	(	O	F	F	L	I	N	E	)				
M	O	D	E	:		C	O	D	E	L	O	G	(	S	C	A	N	)			

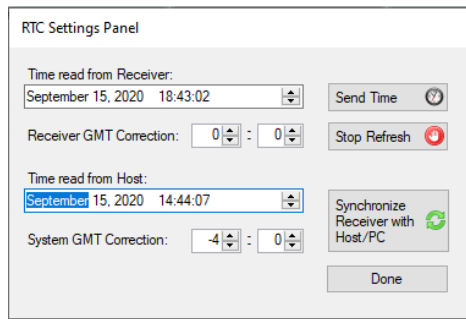
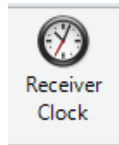
N BLANK 7	↑ G 8	↓ G 9	LIGHT
GPS 4	↑ F 5	↓ F 6	END ESC
MANUAL 1	CODELOG 2	SET Δ 3	BSPACE ←
SETUP 0	LOG ON +/-	INFO •	ENTER →

Done



## 3.4. Receiver Clock

The Receiver Clock icon will open the SRX1200 Real Time Clock Settings Panel. This is the time used by the receiver. The receiver will log all data in GMT (Greenwich Mean Time). GMT is not altered by Daylight Savings Time. Changes to the RTC Clock can only be made when the Receiver is in **IDLE** mode and you must be logged on. You can then set a GMT correction based on your local time.

A screenshot of the "RTC Settings Panel" window. The panel has a light gray background and a title bar. It contains two main sections. The first section, "Time read from Receiver:", shows a date and time of "September 15, 2020 18:43:02" in a text box with a dropdown arrow. To its right is a "Send Time" button with a clock icon. Below this is a "Receiver GMT Correction:" field with two spinners set to "0" and a colon. To its right is a "Stop Refresh" button with a red circular arrow icon. The second section, "Time read from Host:", shows a date and time of "September 15, 2020 14:44:07" in a text box with a dropdown arrow. To its right is a "Synchronize Receiver with Host/PC" button with a green circular arrow icon. Below this is a "System GMT Correction:" field with two spinners set to "-4" and "0" and a colon. At the bottom right is a "Done" button.

## 3.5. Project Editor

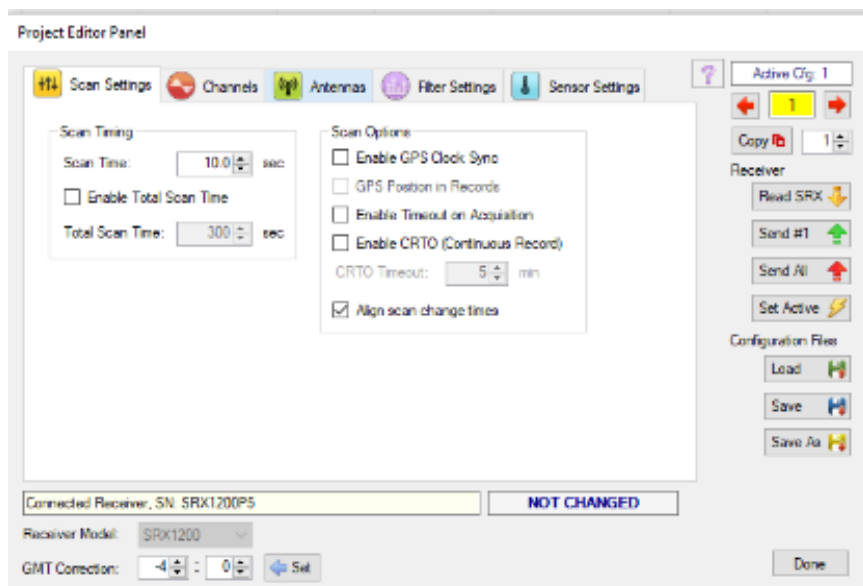
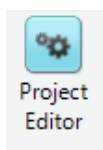
The Project Editor will allow you to design, edit, send and retrieve project configurations while the receiver is in **IDLE** or **CODELOG** mode. A Project Configuration is the setup of parameters such as the frequency, the scan time and the antenna settings.

The Project Editor allows you to create or edit configurations with or without a receiver connected to the Host. Once the parameters are entered, the Project Configuration can be saved as a project file and then uploaded to the receiver once it is connected. This allows a project file (with identical parameters) to be uploaded to multiple receivers after configuring the project only once.

**NOTE:** when creating a Project Configuration without a receiver connected, all parameter options will be available to you; however, these parameters or settings may not be supported by your receiver model. If you create a Product Configuration offline, save it to a file and then attempt to load that configuration onto a receiver that does not support one or more of the options specified in the file, the Host will detect this conflict and let you know.

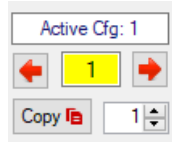
Setting up the Project Configuration is a key component to optimizing the performance of your receiver. Some factors to consider:

- The type of tag being used (Beeper (pulsed), ID-only, Sensor, Even/Odd, ID+100)
- The number of tags in the study
- The number of distinct frequencies and antennas to be monitored
- Geographic footprint of the study area and deployment schedule
- System reception range
- Environmental factors specific to your area
- Target species behaviour



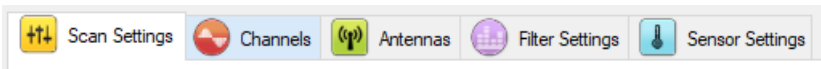
### 3.5.1. Navigating the Project Editor

The Project Editor supports entry for up to eight distinct configurations within a single Project File, individually referenced on the top right corner of the Project Editor window. By default, the first configuration will be the Active Configuration, unless you set it up otherwise



You can toggle through the different configurations using the red arrow buttons, and once the correct configuration is selected, you can use the **Set Active button**. **The receiver must be connected for this step.**

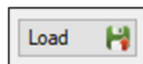
It is not necessary to enter more than one configuration; this feature allows greater flexibility for you to pre-set multiple configurations and switch quickly between them in the field. You can setup various parameters based on the capabilities of the given receiver model. By clicking on the labelled tabs, you can navigate between the Scan settings, Channels, Antennas, Filter Settings and the Sensor Settings for a given project configuration.



Once you have made changes to the Configuration, it is necessary to Save them as a project file. Please note, saving the project file will NOT send them to your receiver. It will simply save a copy of the project file on your PC; you are advised always to save a copy of your project file for later reference.



You can also Load or open pre-saved project files. This is especially useful if the same project configuration is to be used on multiple receivers.

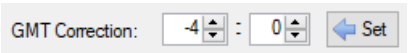


When you need to send a project file to a receiver, ensure the receiver is connected, logged on via the Host and in **Idle Mode** prior to opening the Project Editor. You can then click the “Send #1” button to send the first project configuration to the receiver.



If you have setup multiple configurations within the same project file, you can click the “Send All” button. The **Read SRX** button is used to retrieve the project configuration file currently saved on the receiver.

You can set up the GMT (Greenwich Mean Time) correction based on your own geographic location. All data will be collected in GMT by the receiver, but by adjusting the correction, you can view the data in your local time on the Host.



You can assess the changes to your configuration, and verify whether the configuration has been sent to the receiver via the Status bar. It will show the serial number of the connected receiver, and whether the configuration has “Not Changed”, “Changed”, been “Sent” or is “Not Connected”.



### 3.5.2. Scan Settings

#### Scan Timing

The Scan Time is the length of time spent by the receiver monitoring for a given frequency on one antenna. This time needs to be at least 0.5 seconds more than the longest burst interval on your VHF tags. The value can be as long as 600 seconds (10 minutes).

For example, if the transmitter burst intervals are 5.3 seconds, use a minimum scan time of 5.8 seconds. If there are three different burst intervals (2.3, 4.7, 13.1 s), base the scan time on the longest interval, e.g. minimum 13.6 seconds.

It is typically a good idea to set the Scan Time duration longer than two burst intervals (3 pulses), so that more than one interval is recorded. This makes it easier to ascertain if you have false positive detections.

The screenshot shows the 'Scan Settings' window with the following configuration:

- Scan Timing:**
  - Scan Time: 10.1 sec
  - ☐ Enable Total Scan Time
  - Total Scan Time: 300 sec
- Scan Options:**
  - ☐ Enable GPS Clock Sync
  - ☐ GPS Position in Records
  - ☐ Enable Timeout on Acquisition
  - ☐ Enable CRTD (Continuous Record)
  - CRTD Timeout: 5 min
  - ☒ Align scan change times

## Total Scan Time

The Total Scan Time feature is the number of radio frequencies x the number of receiver antennas x the scan time. If Total Scan Time is enabled, the receiver will use the Scan Time for each frequency per antenna, and then will wait until the Total Scan Time marker is reached, before starting its scanning cycle again. This helps conserve battery life and memory but the chance of missing some events is possible while it is shutdown.

For example, if the scan time is 5.0 seconds with 2 frequencies and 4 antennas, it will take the receiver 40 seconds to complete a full cycle (5.0 seconds x 2 frequencies x 4 antennas = 40 seconds). However, if Total Scan Time is enabled and set to 300 seconds, then the receiver will conduct its 40-second-cycle, then wait 260 seconds in a low power sleep state, before repeating the cycle again.

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
February 13, 2021	02:04:29		Scan Update			169.996	Antenna 1 (60)	LoteK3
February 13, 2021	02:04:34		Scan Update			166.380	Antenna 2 (50)	LoteK4
February 13, 2021	02:04:39		Scan Update			169.996	Antenna 2 (50)	LoteK3
February 13, 2021	02:04:44		Scan Update			166.380	Antenna 3 (50)	LoteK4
February 13, 2021	02:04:49		Scan Update			169.996	Antenna 3 (50)	LoteK3
February 13, 2021	02:04:54		Scan Update			166.380	Antenna 4 (50)	LoteK4
February 13, 2021	02:04:59		Scan Update			169.996	Antenna 4 (50)	LoteK3
February 13, 2021	02:05:04		Scan Update		---	VHF OFF	OFF	NA
February 13, 2021	02:09:24		Scan Update			166.380	Antenna 1 (60)	LoteK4
February 13, 2021	02:09:29		Scan Update			169.996	Antenna 1 (60)	LoteK3

# Scan Options

## 1) Enable GPS Clock Sync

The GPS Clock Sync is used to set the receiver's time to the GPS time and this will override the time that was set manually via the Receiver Clock in the Main Menu. This feature is available on all models except the M1. The GPS antenna will need to be attached to the back of the receiver. This will only turn on the GPS device, it will not record any location data.

## 2) Enable GPS Records

This feature will store the latitude and longitude of the receiver obtained from the GPS engine for each record. GPS Clock Sync must be enabled first.

## 3) Enable Timeout on Acquisition (TOA)

If this option is enabled, the receiver will begin its scan on a given frequency and antenna, and if a valid tag signal is recorded after an X amount of time with TOA enabled, the receiver does NOT continue scanning for the remaining scan time, and instead moves on to the next frequency/ antenna pairing. The purpose of this option is to listen to the next frequency as fast as possible, reducing the chance of missing an event on the other frequencies. This is typically more helpful for beeper tags, rather than coded tags that are all on the same frequency.

For example, if Scan Time is set to 20 seconds, and TOA is enabled, if the receiver picks up a valid tag signal after 11 seconds on frequency 150.310 MHz on antenna 1, it will skip the remaining 9 seconds, and go to the next designated frequency/ antenna pairing, in this case 150.320 MHz on antenna 2.

**NOTE:** To discuss the applicability of TOA for your study, please contact your Lotek representative for more information.

#### 4) Enable Continuous Record Time Out (CRTC)

CRTC (Continuous Record Time-Out) can be used to conserve memory. Instead of recording each detection individually, enabling CRTC allows the receiver to record the number of valid detections for each transmitter ID at a specific frequency and antenna over a fixed time period (CRTC Timeout).

If this option is enabled, detections of specific code and channel combinations are monitored for a period of time, and the count of detections is stored along with averages for signal strengths and sensor values if applicable. This is tracked separately for each ID, each channel and each antenna. When selected, you must specify a valid setting for CRTC in minutes.

The record uses this format: **Transmitter X on Frequency A and Antenna E was detected N times with an average Signal Strength of S.**

Enabling CRTC is a legacy feature from past SRX models, used when memory capacity was limited. This feature is generally not recommended with the new generation of SRX receivers.

#### 5) CRTC Timeout (minutes)

This specifies the amount of time (1- 99 minutes), a channel/antenna combination will be monitored after which all detections in this time window will be averaged. The resulting averages for each code observed during this period and for this channel/antenna combination are stored as a single record containing start and end times, detection counts and average signal strength. If sensors are enabled, these will also be averaged. As CRTC provides an averaged value for detections within the specified time window, once enabled, GPS coordinates (receiver mode specific) can not be recorded.

The CRTC feature is application specific. It is particularly useful in applications where there is a high probability that numbers of tagged animals will stay for extended periods in the detection zone and or if extended periods between sites visits for data download are anticipated.

#### 6) Align Scan Change Times

This option applies only if using 2 or more antennas or channels. It allows the receiver to align antenna or channel scan times that divide into 60 seconds, to allow for the same beginning time for the scan to occur for a new antenna/channel combination. You are advised to select a scan time divisible into or by 60, according to the number of antennas you have connected to the receiver.

- Scan Time= 10 s, Scan switch will happen at exactly 00, 10, 20, 30, 40, 50 seconds past the minute.
- Scan Time = 15 s, Scan switch will happen at exactly 00, 15, 30 and 45 seconds past the minute.
- Scan Time = 120 seconds, Scan switch will happen at exactly 2, 4, 6, 8, etc. minutes past the hour.

This feature can be especially useful if using 4 antennas at the four cardinal directions. For example, you can set up your towers to all be using the N antenna at 00:00, E antenna at 00:15, S at 00:30 and W at 00:45 of each minute.

### 3.5.3. Channels

This tab allows you to enter the frequencies to be monitored, and to specify the tag type and the codeset.

Channel Add or Edit Panel

Frequency of Channel:

138.000

MHz

Code Set:

Lotek3

Type of Channel:

ID-Only

ID + 100 Binary Motion Encoding

☐

Beep Channel BPM Entry:

1 BPM:

0.0

+/-

0

%

2 BPM:

0.0

+/-

0

%

3 BPM:

0.0

+/-

0

%

OK



[illegible]

## Adding Frequencies

Each line of the table is a channel into which a tag can be entered by using the “Add” button. The Channel Add or Edit panel box will appear, and ask for the Frequency, the Codeset, and Tag type.

The order in which the frequencies are entered, will be the order in which they are scanned by the receiver. A frequency can be **enabled/disabled** by clicking on the checkmark in the “#” column; only the frequencies with a tick in the checkbox will be scanned.

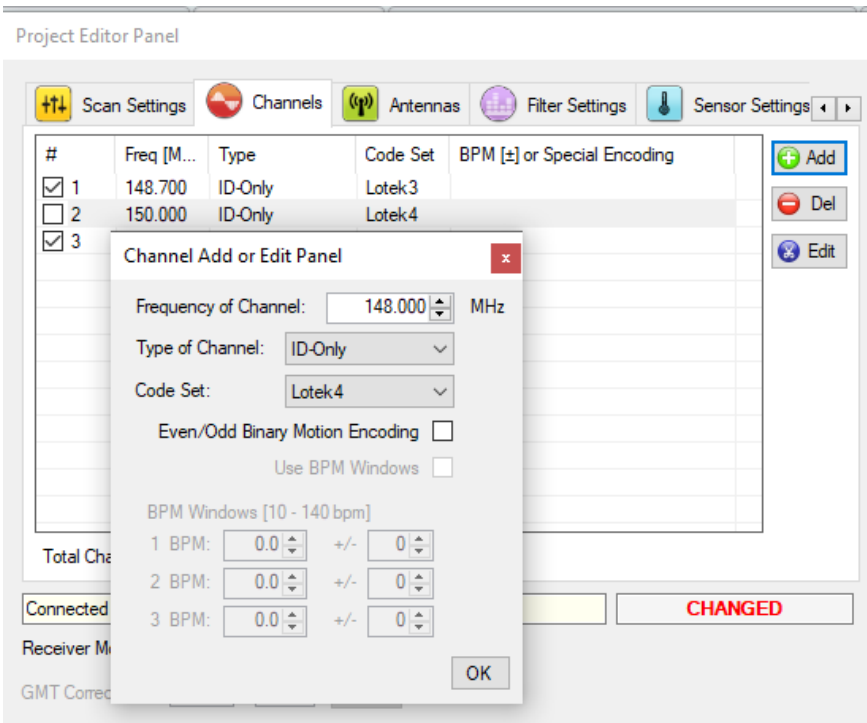
All coded tags are using a particular codeset, e.g., Lotek4. Please contact [support@lotek.com](mailto:support@lotek.com) if you are unsure of the codeset for your tags. If the incorrect codeset is selected, the tag ID's will not appear on the receiver LCD (for Manual Receivers) or code log data (for Datalogging receivers).

For uncoded, **Beeper tags**, "None" should be selected as the codeset. Detections will be validated by the Burst Rate, which varies slightly according to temperature. Therefore, an appropriate BPM (Beeps per minute) and a tolerance value must be entered in the Beep Channel BPM Entry area. A 5% tolerance represents a common value. However, if you have Beeper tags with a variable burst rate, e.g. burst rate indicates temperature, select the default

which allows for all the variation you can expect. Default is referred to as “Full Range” and anticipates transmissions from 10 – 140 BPM.

There may be occasions where two or even three beeper tags occupy the same frequency. In such instances, differentiating these tags requires that they transmit at different ‘beep rates. The second and third BPM window provides the means to define and differentiate different tags, or a beeper tag that has two different burst rates, i.e., a faster rate after a mortality event. In situations where multiple beeper tags are on the same frequency, make sure there are sufficiently different burst rates to optimize data collection while avoiding the possibility of overlap.

The “ID + 100 Binary Motion Encoding” box should **NOT** be selected unless you have specifically purchased transmitters with that feature. Please contact [support@lotek.com](mailto:support@lotek.com) if you are unsure.



For coded **Sensor tags**, please select the channel type as Sensor. A sensor tag identifies itself by way of unique temporal spacing of a pulse burst but also

modulates burst spacing to support transmission and logging of temperature, pressure and activity data. The remaining settings for the sensor tags will need to be entered under the “Sensor Settings” tab.

## Editing Frequencies

If you need to edit a frequency, click on the specific frequency line on the table, it should become highlighted. Then click on the **“Edit”** button. The Channel Add or Edit Panel Box will appear.

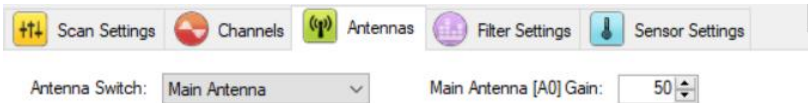
## Deleting Frequencies

If you need to delete a frequency, click on the specific frequency line on the table, it should become highlighted. Then click on the **“Delete”** button. It will be removed from the table.

### 3.5.4. Antennas

#### Manual Receiver (M1, M2, MD1, MD2)

If your receiver is an M1 or M2, it will only have one antenna option. You can set up and change the antenna gain using this tab. If you have an MD1 or MD2 receiver, you have the option of using additional devices such as the ASP-4 or ASP-8 device sold by Lotek to monitor additional antennas. More information can be found below.



*Gain (0 -99):* The higher the gain, the more sensitive the receiver will be on a given antenna. In an environment with little noise on the same frequency as your tags, you want the gain to be high, so that the weak signals can be detected. However, if there is a lot of radio interference (noise), and the gain is set too high, even strong tag signals can be obscured by the interference. In that case, lowering the gain would reduce the background noise, and tags are more likely to be detected, although the weaker signals will not be. Therefore, it is important to optimize the gain for your needs and environment through field testing.

## Code Logging Receiver (D1, D2)

With an SRX1200-D receiver (D1, D2), you can add up to four antennas to the Antenna Array Configuration Table, and adjust the gain for each antenna individually.

Scan Settings

Channels

Antennas

Filter Settings

Sensor Settings

Antenna Switch:

AS4 Antenna Array

Main Antenna [A0] Gain:

50

Antenna Array Configuration

#	Antenna	Gain	Status
1	Antenna 1	70	
2	Antenna 2	75	
3	Antenna 3	75	
4	Antenna 4	60	

Master Antenna Options:

No Master Antenna

Select Master:

Master Gain:

50

Scan Priority:

Channels 1st, then Antennas

☐ Enable Master Preview

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# Master Antenna Assignment

Master Antennas can be defined in one of two ways:

Group A1 + A2 + A3 + A4: The Master will consist of ALL the antennas in the group and will be activated simultaneously. **AMG**, (Antenna Master Group) appears in the Status column.

Select One Antenna: The Master will only be one Antenna Port# from the corresponding 'Select Master' pull-down menu and its status is updated in the panel display. For example, selecting Port #3 results in displaying **AM3**, (Antenna Master, Port 3) under the Status column (see below). A single Antenna Master may be chosen to detect a tag moving through a mandatory reception zone, before it would be detected on other antennas.

3	Antenna 3	60	AM3
---	-----------	----	-----

Master Preview

If enabled, the 'Master Antenna' will preview a channel/frequency. If no valid signals are detected during this preview, the SRX1200 will NOT scan this channel with the other antennas in the group. As well as reducing the scan cycle time, this also conserves power. This feature can only be used under Frequency Priority.

#	Antenna	Gain	Status
1	Antenna 1	60	AMG
2	Antenna 2	60	AMG
3	Antenna 3	60	AMG
4	Antenna 4	60	AMG

# Scan Priority Assignment

Within the scan priority assignment, there are 2 options:

- 1) Frequency Priority
- 2) Antenna Priority

To enable use of scan priority assignment:

1. Assign a physical port to each antenna
2. Assign a gain value to each port.
3. Designate one of the antenna ports as the master antenna under Master Antenna Option.
4. Assign gain value(s) to be used for master antenna(s), if applicable.
5. Select Scan Priority type and choose either frequency of antenna priority.

Details on these assignment types are below.

## 1) Frequency Priority

The receiver will prioritize scanning all of the different frequencies on each antenna, then move on to the next antenna.

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
January 04, 2023	18:01:41		Scan Update			148.700	Antenna 3 (80)	LoteK3
January 04, 2023	18:01:45		Scan Update			148.700	Antenna 4 (80)	LoteK3
January 04, 2023	18:01:49		Scan Update			150.000	Antenna 1 (80)	LoteK4
January 04, 2023	18:01:53		Scan Update			150.000	Antenna 2 (80)	LoteK4
January 04, 2023	18:01:57		Scan Update			150.000	Antenna 3 (80)	LoteK4
January 04, 2023	18:02:01		Scan Update			150.000	Antenna 4 (80)	LoteK4
January 04, 2023	18:02:05		Scan Update			166.380	Antenna 1 (80)	LoteK6M
January 04, 2023	18:02:09		Scan Update			166.380	Antenna 2 (80)	LoteK6M
January 04, 2023	18:02:13		Scan Update			166.380	Antenna 3 (80)	LoteK6M
January 04, 2023	18:02:17		Scan Update			166.380	Antenna 4 (80)	LoteK6M
January 04, 2023	18:02:21		Scan Update			148.700	Antenna 1 (80)	LoteK3
January 04, 2023	18:02:25		Scan Update			148.700	Antenna 2 (80)	LoteK3

## 2) Antenna Priority

The receiver will prioritize scanning a frequency on all antennas first, then move on to the next frequency.

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
January 04, 2023	17:59:54		Scan Update			150.000	Antenna 1 (80)	LoteK4
January 04, 2023	17:59:58		Scan Update			166.380	Antenna 1 (80)	LoteK6M
January 04, 2023	18:00:02		Scan Update			148.700	Antenna 2 (80)	LoteK3
January 04, 2023	18:00:06		Scan Update			150.000	Antenna 2 (80)	LoteK4
January 04, 2023	18:00:10		Scan Update			166.380	Antenna 2 (80)	LoteK6M
January 04, 2023	18:00:14		Scan Update			148.700	Antenna 3 (80)	LoteK3
January 04, 2023	18:00:18		Scan Update			150.000	Antenna 3 (80)	LoteK4
January 04, 2023	18:00:22		Scan Update			166.380	Antenna 3 (80)	LoteK6M
January 04, 2023	18:00:26		Scan Update			148.700	Antenna 4 (80)	LoteK3
January 04, 2023	18:00:30		Scan Update			150.000	Antenna 4 (80)	LoteK4
January 04, 2023	18:00:34		Scan Update			166.380	Antenna 4 (80)	LoteK6M
January 04, 2023	18:00:38		Scan Update			148.700	Antenna 1 (80)	LoteK3

# Using an ASP-4 or ASP-8 Device

To enable use of external ASP antenna switchbox:

1. Assign a physical port to each antenna
2. Assign a gain value to each port.
3. Designate the master antenna.
4. Assign gain values to be used for master antennas, if applicable.
5. Select Scan Priority type and choose the Master Antenna Option.

The screenshot shows the 'Antennas' configuration panel. At the top, there are tabs for 'Scan Settings', 'Channels', 'Antennas' (selected), 'Filter Settings', and 'Sensor Settings'. Below the tabs, the 'Antenna Switch' is set to 'ASP8 Antenna Array' and the 'Main Antenna [A0] Gain' is set to 50. The 'Antenna Array Configuration' table lists 8 antennas with their respective gain values. Antenna 8 is highlighted in blue. To the right of the table, there are 'Master Antenna Options' including a dropdown for 'No Master Antenna', a 'Select Master' dropdown, and a 'Master Gain' of 50. Below these are 'Scan Priority' options set to 'Channels 1st, then Antennas' and an unchecked 'Enable Master Preview' checkbox.

#	Antenna	Gain	Status
1	Antenna 1	60	
2	Antenna 2	60	
3	Antenna 3	60	
4	Antenna 4	60	
5	Antenna 5	75	
6	Antenna 6	75	
7	Antenna 7	75	
8	Antenna 8	75	

The screenshot shows the 'Receiver Configuration Panel'. At the top, there are tabs for 'Scan Settings', 'Channels', 'Antennas' (selected), 'Filter Settings', and 'Sensor Settings'. Below the tabs, the 'Antenna Switch' is set to 'ASP4 - Antenna Array' and the 'Main Antenna [A0] Gain' is set to 50. The 'Antenna Array Configuration' table lists 4 antennas with their respective gain values. Antenna 3 is highlighted in blue. To the right of the table, there are 'Master Antenna Options' including a dropdown for 'No Master Antenna', a 'Select Master' dropdown, and a 'Master Gain' of 50. Below these are 'Scan Priority' options set to 'Channels 1st, then Antennas' and an unchecked 'Enable Master Preview' checkbox. At the bottom left, there is a 'Default Configuration' section with a 'Receiver Model' dropdown set to 'SRX1200'. At the bottom right, there is a 'CHANGED' button and a 'Done' button. On the far right, there is a vertical sidebar with buttons for 'Active Cfg: NA', '1', 'Copy', '1', 'Receiver' (with 'Read SRX', 'Send #1', 'Send All', 'Set Active' sub-buttons), and 'File Storage' (with 'Read', 'Save', 'Save As' sub-buttons).

#	Antenna	Gain	Status
1	Antenna 1	70	
2	Antenna 2	60	
3	Antenna 3	60	
4	Antenna 4	50	

### 3.5.5. Filter Settings

You can set up filters for the detection or rejection of tags at a pulse level and at the code/Tag ID and channel level. You will still be able to 'hear' the tags via headphones, however, by enabling these filters, they will not be recorded. This avoids recording unnecessary noise and/or unwanted transmitter records.

Within filter settings, you have the following two options:

- 1) Pulse Filters
- 2) Channel and ID filters

#### 1) Pulse Filters

**Noise Threshold (dB):** A setting for the minimum signal level. A detected signal below the threshold entered will not be accepted as a valid signal by the receiver.

**Echo Limit (ms):** An incoming signal transmission may arrive at the receiver via direct path, as well as from multiple echo paths. It is not desired that the echo be misinterpreted as a valid signal. The echo filter places a minimum limit on the time period between reception of the first pulse and any subsequent pulses. Should another pulse arrive prior to the specified time period, it is treated as an echo of the first signal and discarded.

**Enable Pulse Width Filter:** Pulse width is the time a pulse transmits, and is represented in milliseconds (ms). This filter is enabled on the Project Editor Configuration with a default of 2 ms. It can be altered to a range between 1 to 50 ms; any pulse shorter than your Minimum Pulse Width is discarded. Please note, a normal beeper pulse width can vary from 11 to 25 ms, whereas a coded tag will can have a pulse width of 1 or 2 ms, so **caution should be taken** when making any changes to the Minimum Pulse Width filter.

**Enable Maximum Signal Deviation Filter:** This discriminator filter is disabled by default on the Project Editor Configuration. It is only applicable in extremely limited situations; please contact Lotek support for more information for use of this filter for your study.



Coded signals are comprised of pulse streams, if their amplitudes (power level received), varies in strength more than the selected value, they are not logged. User can select values between 0 – 150.

## 2) Channel and ID Filters

**No Filters:** All tag ID's and channels will be recorded.

**Reject Channel AND Tag ID:** The tag IDs on the indicated frequencies will not be recorded.

**Accept Channel AND Tag ID:** Only these tag IDs on the indicated frequencies will be recorded. All other detections will be discarded.

**Reject Tag ID only:** All tags with the indicated ID will not be recorded.

**Accept Tag ID only:** Only tags with the indicated ID will be recorded.

The screenshot shows the 'Filter Settings' tab of a software interface. It contains two main sections: 'Pulse Filters' and 'Channel and ID Filters'.

**Pulse Filters:**

- Noise Threshold: 10
- Echo Limit (ms): 15
- Enable Pulse Width Filter: ☐
- Minimum Pulse Width (ms): 2.0
- Enable Maximum Signal Deviation Filter: ☐
- Maximum Deviation: 15

**Channel and ID Filters:**

Filter Type: **No Filters** (selected)

Below the dropdown menu, there are two empty tables with headers 'N', 'Channel', and 'Tag ID'.

### 3.5.6. Sensor Settings

Some coded NanoTags have sensors such as tag temperature. Up to three sensor types can be used concurrently by the receiver. For the receiver to interpret and display sensor data correctly, you must specify sensor range (min. & max.) and resolution (number of levels). This information is typically included with the documentation that accompanies the transmitter shipment.

If you are unsure of the codeset and the sensor information for your tags, please contact Lotek at [support@lotek.com](mailto:support@lotek.com).

++

Scan Settings

Channels

Antennas

Filter Settings

Sensor Settings

Lotek3 Code Set Sensors

# of Levels:  (fixed)

	Minimum	Maximum
<input checked="" type="checkbox"/> Temperature	<input type="text" value="0.0"/> C	<input type="text" value="0.0"/> C
<input type="checkbox"/> Pressure	<input type="text"/> psi	<input type="text"/> psi
<input type="checkbox"/> Motion	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Activity	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> EMG	<input type="text"/>	<input type="text"/>

Lotek5 Code Set Sensors

# of Levels:

	Minimum	Maximum
<input type="checkbox"/> Temperature	<input type="text"/> C	<input type="text"/> C
<input type="checkbox"/> Pressure	<input type="text"/> psi	<input type="text"/> psi
<input type="checkbox"/> Motion	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Activity	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> EMG	<input type="text"/>	<input type="text"/>

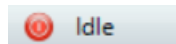
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## 4. Receiver Modes of Operation

The SRX1200 has several ways of operating, and these can be controlled from the Host. Some operating modes are model dependent indicated in brackets in the headings below. It is necessary to be Logged On to access most of the receiver functions.

### 4.1. Idle

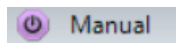
This mode allows access to the receiver configuration including 'Live' editing and uploading of project files to and from the receiver. You cannot make any changes to the frequency, scan times or antennas unless you are in IDLE mode. This mode will stop all active scanning cycles by the receiver (Manual, Monitor and Codelog Modes).



### 4.2. Manual Mode (M, MD)

This mode allows you to view tag detections virtually via the Manual Mode Panel. You can make adjustments to various parameters, and then start the scanning cycle.

This mode is useful when testing the receiver and tags prior to field work. The detections will only be displayed on the Host via the computer, and not on the physical receiver LCD when using this feature.



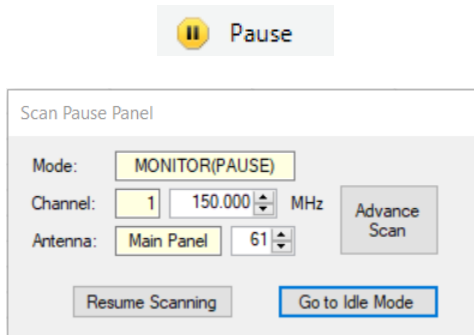


### 4.3.2. Monitor Mode- MD

This mode allows you to view raw detections in real time as tags are detected and logged as Quick Records in the Main Menu > View Data.

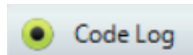
### 4.3.3. Pause

Pause allows for limited adjustments to the currently active configuration. When the receiver is in Monitor mode, and the Pause button is pressed, the Host launches the Scan Pause Panel. This allows you to suspend the scan cycle, and focus on one frequency and one antenna. The panel allows you to adjust a channel frequency or antenna gain. When you are ready, you can Advance the Scan to the next frequency and next antenna combination, resume the scanning cycle or go to Idle mode to make more changes in the Project Editor.



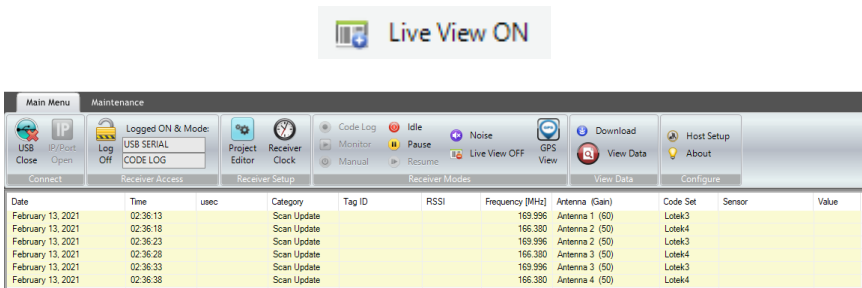
### 4.4. Codelog (MD & D models)

This mode allows you to log any detections received by the receiver unit.



### 4.4.1. Live View ON

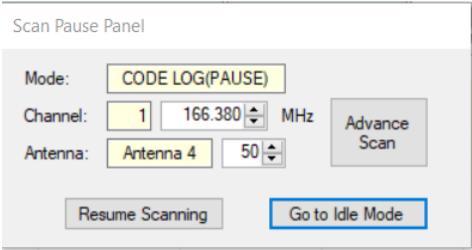
Enabling Live View allows you to view the receiver scanning cycle and detections in real time. The screen displays the receiver listening to frequencies and antennas in turn, according to the configuration. The receiver will not log everything that appears on the Live View screen; the receiver will only log valid tag and sensor detections. The benefit of this mode is to view your project configuration in action, and to make changes as needed by returning to Idle mode, and the Project Editor.



### 4.4.2. Pause

Pause allows for limited adjustments to the currently active configuration, when the receiver is in CodeLog mode. The Scan Pause Panel allows you to suspend the scan cycle, and focus on one frequency and one antenna combination. The panel allows you to adjust the gain and/or frequency.

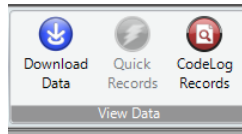
When you are ready, you can Advance the Scan to the next frequency and/or antenna combination, resume the scan cycle or go to Idle mode to make more changes in the Project Editor.



## 5. Data Download

### 5.1. Download Codelog Data (MD, D models)

To download data from the receiver, click on the Download button in the Main Menu. The Data Download Panel will open up from which you can download all records, data since the last download, or a specified date range. Click on the appropriate button to download the desired data file.



Data Download Panel

Available Data on Receiver

CODE LOG Data: Log Records Available, 174.464 KBytes

Quick Record Data: No Quick Records Available on Receiver

From: May 19, 2022 16:45:26

To: January 4, 2023 18:02:39

Refresh

Download Options

Download All Records

Download All Log Records

Download All Quick Records

Date & Time of Last Download:

January 4, 2023 16:43:14

Download All Logs Since Last Download

Specify Date & Time Range

Start Date & Time:

May 19, 2022 16:45:26

End Date & Time:

May 19, 2022 16:45:26

Download Range

Overall Rate: bps

Total Time: s

Packet Resets:

Timeout Count:

File Naming Options

File Name Preset Options

File Name Prefix:

Use Receiver Serial Number

Use Presets Below

Use Date String

Use Time String

IT'll Name It Myself

Save File & View

Directory:

Browse

File Name:

Save

View

(All files will be given a ".BIN" extension)

Delete CODELOG Data

Delete Quick Record Data

Done

Once downloaded, you will need to save the data file in a directory with a unique file name. Data from the receiver will be saved as a binary .BIN file, which can later be converted to other file formats using the "View File" button.

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**Data Download Panel**

**Available Data on Receiver**

CODE LOG Data: Log Records Available, 174.464 KBytes

Quick Record Data: No Quick Records Available on Receiver

From: May 19, 2022 16:45:26 To: January 4, 2023 18:02:39 Refresh

**Download Options**

Download All Records  
Download All Log Records  
Download All Quick Records

Date & Time of Last Download:  
January 4, 2023 16:43:14  
Download All Logs Since Last Download

Specify Date & Time Range  
Start Date & Time:  
May 19, 2022 16:45:26  
End Date & Time:  
May 19, 2022 16:45:26  
Download Range

Overall Rate: bps Total Time: 0 s Packet Resets: 0 Timeout Count: 0

**File Naming Options**

☒ Use Presets Below ☐ I'll Name It Myself

File Name Preset Options

File Name Prefix: LOG\_ ☐ Use Date String 20230104

☒ Use Receiver Serial Number SRX1200DP1 ☐ Use Time String 132654

**Save File & View**

Directory: C:\Users\bfarooq\Desktop\SRX1200 Data Download Browse

File Name: LOG\_SRX1200DP1.BIN Save View  
(All files will be given a ".BIN" extension)

Delete CODELOG Data Delete Quick Record Data Done

Once saved, you can click on the view button to go to the SRX1200 Data Viewer. The file can be viewed later as well using the Main Menu > Codelog Records button.

### 5.1.1. Download Quick Record Data (M2, MD models)

To download Quick Record data, use the download data button in Main Menu. Select Download All Quick Records button, and then download.

Attachments Tell me what you want to do

### Data Download Panel

#### Available Data on Receiver

CODE LOG Data: Log Records Available, 184.446 KBytes

Quick Record Data: Quick Records Available, 335 Bytes

From: April 26, 2022 18:57:18 To: January 4, 2023 18:42:43 Refresh

#### Download Options

Download All Records

Download All Log Records

Download All Quick Records

Date & Time of Last Download:

May 25, 2022 20:49:25

Download All Logs Since Last Download

Specify Date & Time Range

Start Date & Time: April 26, 2022 18:57:18

End Date & Time: April 26, 2022 18:57:18

Download Range

Overall Rate:  bps Total Time:  s Packet Resets:  Timeout Count:

#### File Naming Options

☐ Use Presets Below ☐ I'll Name It Myself

File Name Preset Options

File Name Prefix:

☐ Use Receiver Serial Number

☐ Use Date String

☐ Use Time String

#### Save File & View

Directory:  Browse

File Name:  Save View

(All files will be given a ".BIN" extension)

Delete CODELOG Data Delete Quick Record Data Done

This folder is up to date. Connect

Once downloaded, you will need to save the data file in a directory with a unique file name. Data from the receiver will be saved as a binary .BIN file, which can later be converted to other file formats using the "View File" button.

# 5.2. View Data

To view data that has been downloaded from the receiver, you can click on the “View File” button at the bottom of the Data Download Panel.

To view Codelog data, you can also click on the Codelog Records button in the Main Menu and load the saved .BIN file.

SRX1200 Data Viewer - Current File: C:\Users\bfarooqi\Desktop\SRX1200 Data Download\LOG\_SRX1200DP1.BIN

Load

GMT Correction: 0:00:00

Searching and Filtering

Refresh

Date/Time Tag ID Record Type Chan/Ant

Date/Time Filter is Off

Start: May 19, 2022 16:45:26

End: January 04, 2023 18:02:39

Note that the date filter does not act on Complete Environment Records

Export

Date	Time	[s/Sec]	TagID / BPM	Code Set	Freq [MHz]	Antenna	Gain	RSSI	Sensor	Value
May 19, 2022	16:45:26	505184	55	LoteK3	150.680	Antenna 1	50	226		
May 19, 2022	16:45:31	505493	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:45:36	506080	55	LoteK3	150.680	Antenna 1	50	231		
May 19, 2022	16:45:41	506549	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:45:46	507093	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:45:51	507584	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:45:56	508293	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:01	508667	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:06	509211	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:11	509979	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:16	510235	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:21	510796	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:26	511387	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:31	512064	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:36	512544	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:41	512939	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:46	513568	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:51	514352	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:46:56	514832	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:01	515163	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:06	515691	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:11	516416	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:16	516779	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:21	517275	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:26	517861	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:31	518544	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:36	518762	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:41	519568	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:46	519867	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:51	520533	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:47:56	520896	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:48:01	521632	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:48:06	522229	55	LoteK3	150.680	Antenna 1	50	232		
May 19, 2022	16:48:11	522613	55	LoteK3	150.680	Antenna 1	50	232		

To view Quick record data, you can also click on the Quick Records button in the Main Menu and load the saved .BIN file into the Quick Record Panel.

Main Menu Maintenance Diagnostic Production

USB Close

IP/Port Open

Remote Open

Connect

Quick Records Panel

Loaded File: QR\_DATA.BIN

Load Export

Date	Time	usrc	Freq [MHz]	ID/BMP	Antenna	Gain	RSSI	CodeSet	Sensor	Latitude / Longitude
January 4, 2023	18:44:54	396920	150.680	62	Main Panel	25	250	LoteK3	No Sensor	
January 4, 2023	18:44:59	396957	150.680	62	Main Panel	25	250	LoteK3	No Sensor	
January 4, 2023	18:45:04	396997	150.680	62	Main Panel	25	250	LoteK3	No Sensor	
January 4, 2023	18:45:09	397365	150.680	62	Main Panel	25	250	LoteK3	No Sensor	
January 4, 2023	18:45:14	397947	150.680	62	Main Panel	25	250	LoteK3	No Sensor	

Customer DLW Message Monitor

LoteK Only

Value

Done

USB SERIAL @ COM6 - WRITE ACCESS | MODEL: SRX1200-M2 | DEVICE NAME: 00000001 | Rx FW: V1.4.1808.13 | Sx FW: V1.2.1591.14

## 5.3. Export Data

To export data, click on the “Export” button at the bottom of Data Viewer Panel. This will open up the Data Export Panel and will allow you to export the .BIN file as a .TXT or a .CSV. There are also additional options available that you can adjust based on your needs.

Data Export Panel

Export Content and Formatting Options Defaults ☐ Export to SRX800 Legacy Format Files ?

Time Formats: Date, Time & uSeconds in 3 separate columns ▾

Use a text delimiter in tables (as opposed to fixed width columns) ☒

Delimiter for this region: , Specify a field delimiter: ,

Output File Name: (It will go to the same directory as the input file)  
LOG\_SRX1200DP2 CSV ▾  
TXT  
CSV

What categories of data do you want to include?

☐ Log File Header Record

☐ Full Receiver Projects

☒ Detection Records

☒ Battery Reports

☒ User and System Events

☐ CRT0 Records

Do you want to use the same Date Range, Tag ID, Record Type Filters?

☒ All Data - No Filtering

☐ Use Same Filters Used in Display

☐ Include Receiver SN in every record row

How do you want detection records grouped?

☒ As it appears in the file (chronologically). All in one big table.

☐ A separate table for each channel (frequency).

☐ If a project change is found, start a new table

View Export Done

# Appendix

Examples of Code logging with different parameter settings

*No Align Scan Changes, 10 sec scan time, 4 antennas*

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
February 12, 2021	20:52:14		Scan Update			166.380	Antenna 2 (50)	LoteK4
February 12, 2021	20:52:24		Scan Update			166.380	Antenna 3 (50)	LoteK4
February 12, 2021	20:52:34		Scan Update			166.380	Antenna 4 (50)	LoteK4
February 12, 2021	20:52:44		Scan Update			166.380	Antenna 1 (60)	LoteK4
February 12, 2021	20:52:54		Scan Update			166.380	Antenna 2 (50)	LoteK4
February 12, 2021	20:53:04		Scan Update			166.380	Antenna 3 (50)	LoteK4

*Align Scan Changes, 10 sec scan time, 4 antennas*

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
February 12, 2021	21:05:20		Scan Update			166.380	Antenna 2 (50)	LoteK4
February 12, 2021	21:05:30		Scan Update			166.380	Antenna 3 (50)	LoteK4
February 12, 2021	21:05:40		Scan Update			166.380	Antenna 4 (50)	LoteK4
February 12, 2021	21:05:50		Scan Update			166.380	Antenna 1 (60)	LoteK4
February 12, 2021	21:06:00		Scan Update			166.380	Antenna 2 (50)	LoteK4
February 12, 2021	21:06:10		Scan Update			166.380	Antenna 3 (50)	LoteK4
February 12, 2021	21:06:20		Scan Update			166.380	Antenna 4 (50)	LoteK4
February 12, 2021	21:06:30		Scan Update			166.380	Antenna 1 (60)	LoteK4
February 12, 2021	21:06:40		Scan Update			166.380	Antenna 2 (50)	LoteK4

*Align Scan Changes, 15 secs scan time, 4 antennas, 1 frequency*

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
February 12, 2021	22:18:00		Scan Update			166.380	Antenna 2 (50)	LoteK4
February 12, 2021	22:18:15		Scan Update			166.380	Antenna 3 (50)	LoteK4
February 12, 2021	22:18:30		Scan Update			166.380	Antenna 4 (50)	LoteK4
February 12, 2021	22:18:45		Scan Update			166.380	Antenna 1 (60)	LoteK4
February 12, 2021	22:19:00		Scan Update			166.380	Antenna 2 (50)	LoteK4
February 12, 2021	22:19:15		Scan Update			166.380	Antenna 3 (50)	LoteK4
February 12, 2021	22:19:30		Scan Update			166.380	Antenna 4 (50)	LoteK4
February 12, 2021	22:19:45		Scan Update			166.380	Antenna 1 (60)	LoteK4
February 12, 2021	22:20:00		Scan Update			166.380	Antenna 2 (50)	LoteK4

*Align Scan Changes, 15 sec, 4 antennas, 2 frequencies*

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
February 12, 2021	22:11:15		Scan Update			169.996	Antenna 1 (60)	LoteK3
February 12, 2021	22:11:30		Scan Update			166.380	Antenna 2 (50)	LoteK4
February 12, 2021	22:11:45		Scan Update			169.996	Antenna 2 (50)	LoteK3
February 12, 2021	22:12:00		Scan Update			166.380	Antenna 3 (50)	LoteK4
February 12, 2021	22:12:15		Scan Update			169.996	Antenna 3 (50)	LoteK3
February 12, 2021	22:12:30		Scan Update			166.380	Antenna 4 (50)	LoteK4
February 12, 2021	22:12:45		Scan Update			169.996	Antenna 4 (50)	LoteK3
February 12, 2021	22:13:00		Scan Update			166.380	Antenna 1 (60)	LoteK4
February 12, 2021	22:13:15		Scan Update			169.996	Antenna 1 (60)	LoteK3

Align Scan Changes, 15 sec, 4 antennas, 2 frequencies, Scan Priority: Channels 1<sup>st</sup>, then Antennas

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
February 12, 2021	21:24:45		Scan Update			150.000	Antenna 1 (60)	Lotek4
February 12, 2021	21:25:00		Scan Update			166.380	Antenna 2 (50)	Lotek4
February 12, 2021	21:25:15		Scan Update			150.000	Antenna 2 (50)	Lotek4
February 12, 2021	21:25:30		Scan Update			166.380	Antenna 3 (50)	Lotek4
February 12, 2021	21:25:45		Scan Update			150.000	Antenna 3 (50)	Lotek4
February 12, 2021	21:26:00		Scan Update			166.380	Antenna 4 (50)	Lotek4
February 12, 2021	21:26:15		Scan Update			150.000	Antenna 4 (50)	Lotek4
February 12, 2021	21:26:30		Scan Update			166.380	Antenna 1 (60)	Lotek4

No Align Scan Changes, 15 secs, 4 antennas, 2 frequencies, Scan Priority: Antennas 1<sup>st</sup>, then Channels

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
February 12, 2021	22:05:59		Scan Update			169.996	Antenna 1 (60)	Lotek3
February 12, 2021	22:06:14		Scan Update			166.380	Antenna 2 (50)	Lotek4
February 12, 2021	22:06:29		Scan Update			169.996	Antenna 2 (50)	Lotek3
February 12, 2021	22:06:44		Scan Update			166.380	Antenna 3 (50)	Lotek4
February 12, 2021	22:06:59		Scan Update			169.996	Antenna 3 (50)	Lotek3
February 12, 2021	22:07:14		Scan Update			166.380	Antenna 4 (50)	Lotek4
February 12, 2021	22:07:29		Scan Update			169.996	Antenna 4 (50)	Lotek3
February 12, 2021	22:07:44		Scan Update			166.380	Antenna 1 (60)	Lotek4
February 12, 2021	22:07:59		Scan Update			169.996	Antenna 1 (60)	Lotek3

No Align Scan Changes, 15 secs, 4 antennas, 2 frequencies, Scan Priority: Antennas 1<sup>st</sup>, then Channels

February 12, 2021	21:38:56		Scan Update			169.996	Antenna 1 (60)	Lotek3
February 12, 2021	21:39:11		Scan Update			169.996	Antenna 2 (50)	Lotek3
February 12, 2021	21:39:26		Scan Update			169.996	Antenna 3 (50)	Lotek3
February 12, 2021	21:39:41		Scan Update			169.996	Antenna 4 (50)	Lotek3
February 12, 2021	21:39:56		Scan Update			166.380	Antenna 1 (60)	Lotek4
February 12, 2021	21:40:11		Scan Update			166.380	Antenna 2 (50)	Lotek4
February 12, 2021	21:40:26		Scan Update			166.380	Antenna 3 (50)	Lotek4
February 12, 2021	21:40:41		Scan Update			166.380	Antenna 4 (50)	Lotek4


Total Scan Time enabled = 300 secs, Scan time 15 seconds, 4 antennas, 2 frequencies, Align Scan Change Enabled

Date	Time	usec	Category	Tag ID	RSSI	Frequency [MHz]	Antenna (Gain)	Code Set
February 12, 2021	22:21:45		Scan Update			169.996	Antenna 1 (60)	Lotek3
February 12, 2021	22:22:00		Scan Update			166.380	Antenna 2 (50)	Lotek4
February 12, 2021	22:22:15		Scan Update			169.996	Antenna 2 (50)	Lotek3
February 12, 2021	22:22:30		Scan Update			166.380	Antenna 3 (50)	Lotek4
February 12, 2021	22:22:45		Scan Update			169.996	Antenna 3 (50)	Lotek3
February 12, 2021	22:23:00		Scan Update			166.380	Antenna 4 (50)	Lotek4
February 12, 2021	22:23:15		Scan Update			169.996	Antenna 4 (50)	Lotek3
February 12, 2021	22:23:30		Scan Update		---	VHF OFF	OFF	NA
February 12, 2021	22:24:00		Scan Update			166.380	Antenna 1 (60)	Lotek4
February 12, 2021	22:24:15		Scan Update			169.996	Antenna 1 (60)	Lotek3

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