



# Package “nslirqrecorder”

## Description:

The package "nslirqrecorder" consists of several single script files. It allows the user to setup and start/record the IQ streams by using SignalShark SCPI commands and save them as an IQ WAV file. The WAV file format is a universal format supported by many monitoring software products and SDR programs.

## How it works:

The package “nslirqrecorder” works as follows:

1. The “iqrqsettings.py” script is used for basic settings of the IQ stream recording in a dialog window. It asks the user for recorder settings, connection settings, and stream settings. Input parameters like IP addresses, recording length, CBW, file saving details, payload format, etc., are taken from the user, and saved in a text file in the project directory.
2. The script “iqrlevelm.py” reads the IQ recorder settings from the text file generated by the “iqrqsettings.py” script and uses the level meter to specify the center frequency and the bandwidth of the signal to be saved. It then calls the IQ recorder function to save the WAV file in the destination path provided in the settings file.
3. The script “iqrctab.py” reads the IQ recorder settings from the text file generated by the “iqrqsettings.py” script and asks the user to set a threshold for trigger. In this script, the signal of the peak table with the highest level determines the tune frequency parameter for IQ recording. It then calls the IQ recorder function to save the WAV file in the destination path provided in the settings file.

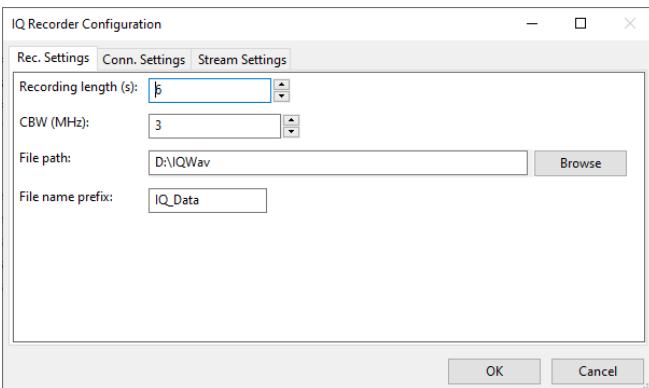
# Procedure

## IQ Recorder Settings

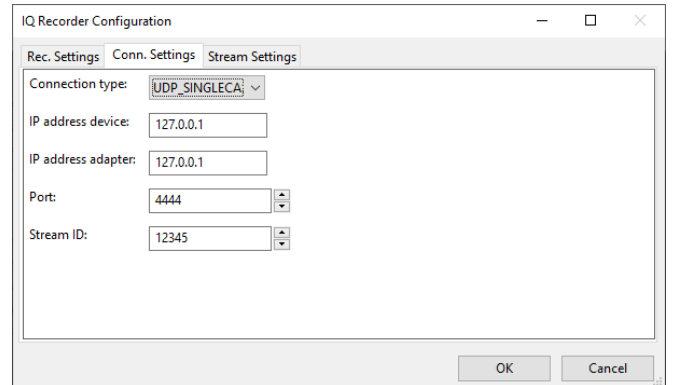
1. Open the Narda Script Launcher application and select the "nslqrecorder" tab.
2. Select the script "IQ Recorder Settings".



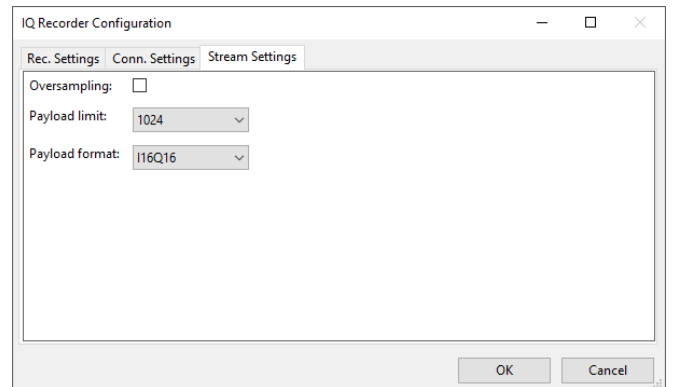
3. From the "Rec. Settings" tab, select the recording length in seconds, the default channel bandwidth CBW to record, the file path for the IQ WAV files and the file name prefix:



4. From the "Conn. Settings" tab, select the TCP or UDP connection type, the IP addresses of the device and the IP address of the network adapter, the communication port, and the stream ID. If you execute the Script on a SignalShark device, you can use the local host IP "127.0.0.1":



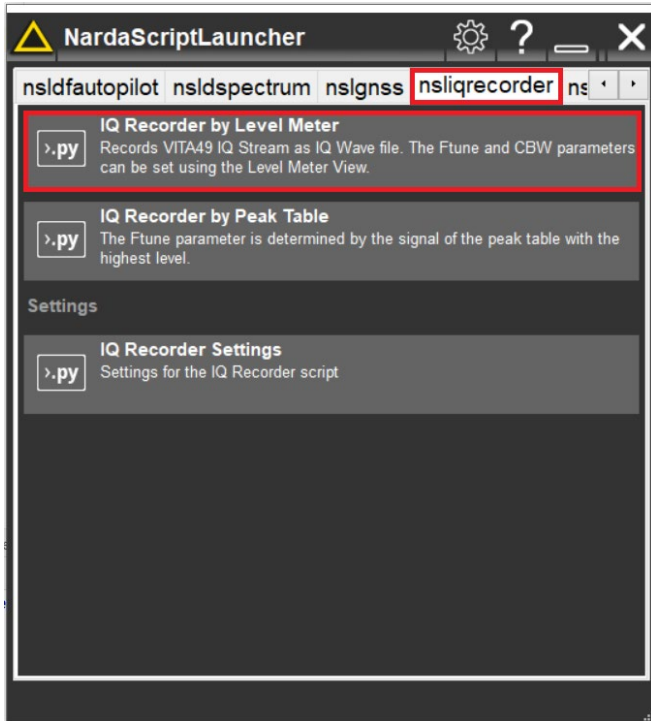
5. From the "Stream Settings" tab, select the payload limit and format. Optionally, check the box for oversampling (if required). By default, data on a network is divided into packets with a maximum size of 1024 bytes. If you set the Payload Limit parameter greater than 1024, "Jumbo Frames" must be enabled on all devices located in the network path. A larger value for the Payload Limit parameter may be necessary if data is lost with the current settings, especially the parameter CBW:



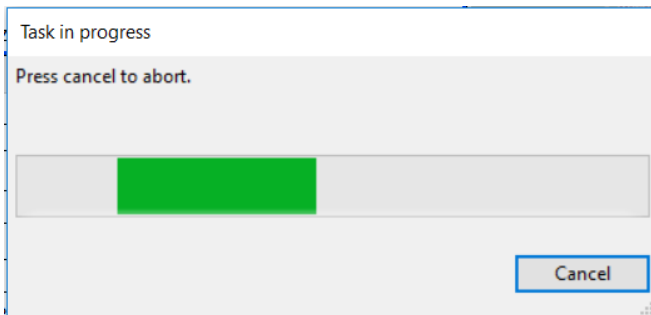
6. Press "Ok" to save the settings in the txt file. The file is located in the same folder as the script.

## IQ Recorder by Level Meter

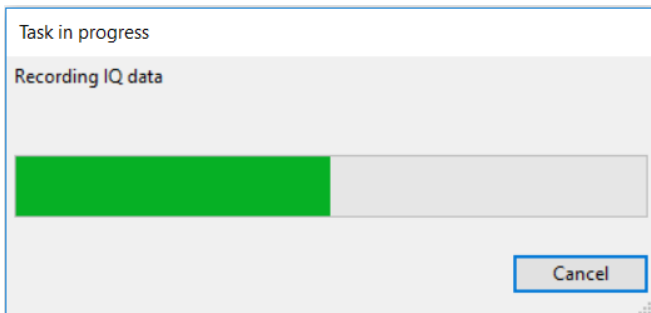
- Open the Narda Script Launcher application and select the "nslqrecorder" tab.
- Select the script "IQ Recorder by Level Meter":



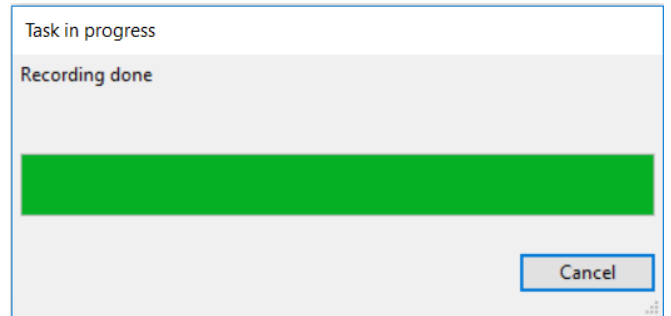
- The progress dialog shows while the script gets the settings from the text file and the SignalShark SCPI commands:



- When the IQ recorder function is called by the script, the following message shows up:



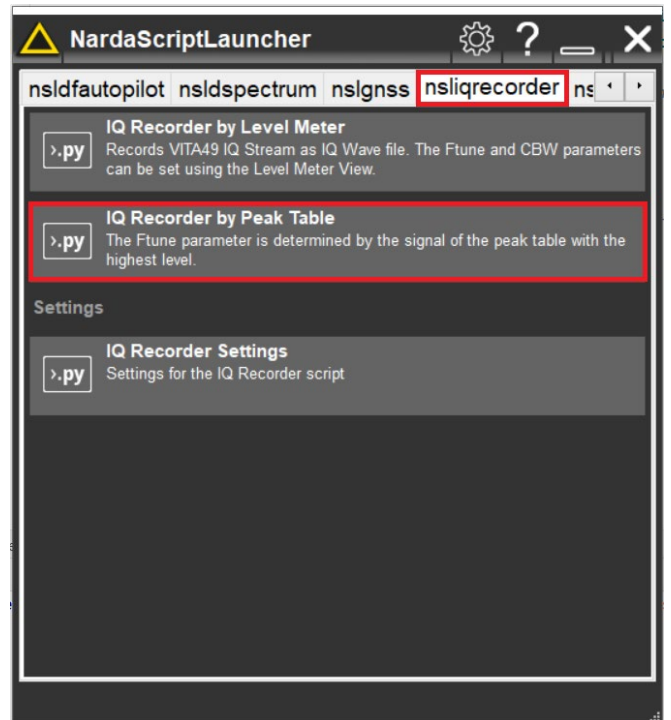
- When the IQ recording is finished, the "Recording done" message shows and the script terminates itself.



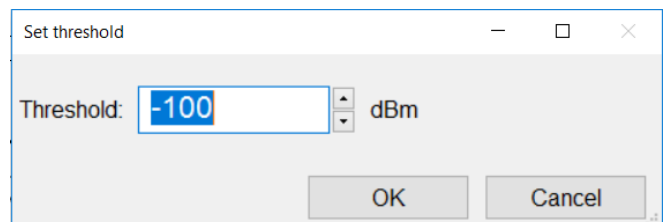
- The WAV file is saved in the path provided in the IQ recorder settings in step 3.

## IQ Recorder by Peak Table

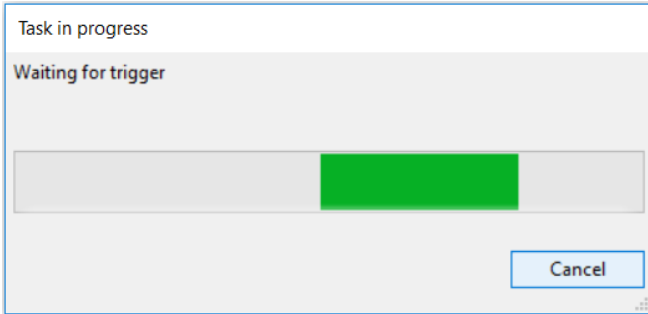
- Open the Narda Script Launcher application and select the "nslqrecorder" tab.
- Select the script "IQ Recorder by Peak Table":



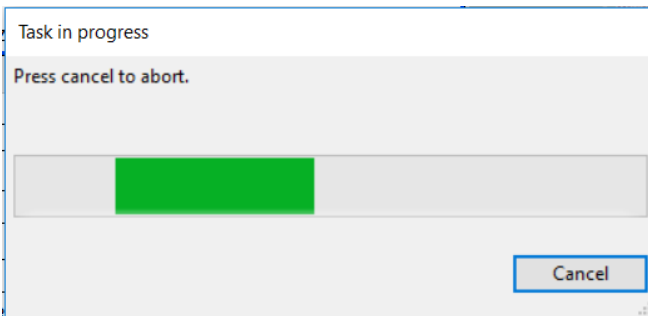
- Enter a threshold value in dBm and press "Ok" to continue:



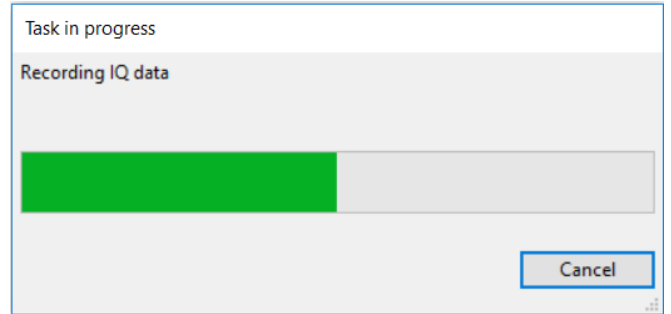
- While the script waits for a trigger (if the set threshold is reached), the following progress dialog appears:



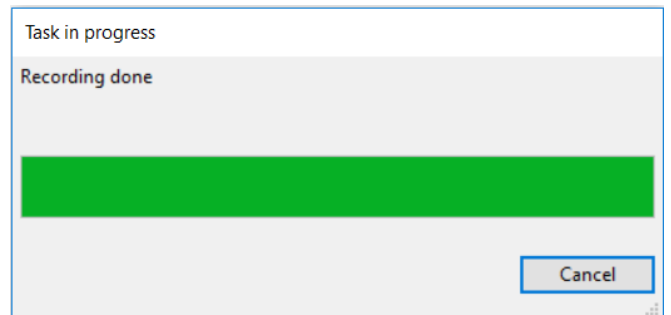
18. When the trigger occurs, the script gets the settings from the text file and the SignalShark peak table SCPI commands. The following progress dialog is shown meanwhile:



19. Then the IQ recorder function is called by the script and the WAV file recording progress is shown:



20. When the IQ recording is finished, the "Recording done" message shows up and the script terminates itself.



21. The WAV file is saved in the path provided in the IQ recorder settings in step 3.

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