

CC256x Logger User Guide

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Introduction

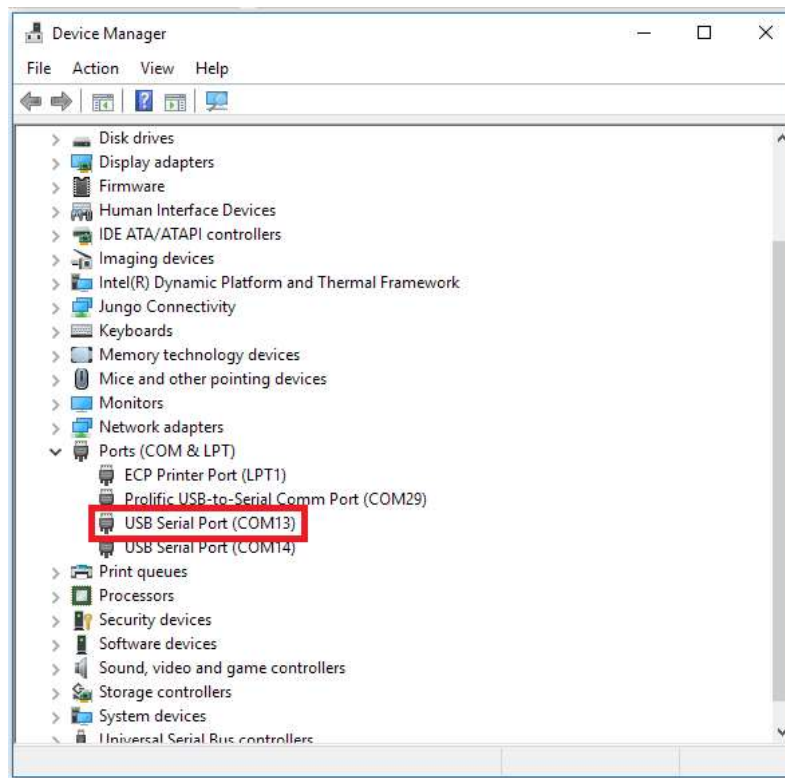
This User's Guide describes the TI Bluetooth logger tool used to trace log messages and protocol transactions captured from the TX_DBG pin of the CC256x device. The logger tool provides visibility into the inner data and states of the Bluetooth controller as well as information on the remote device transactions.

Hardware Requirements

The TX_DBG pin on the CC256x should be accessible. It is a 1.8V UART pin on the CC256x. To connect to the computer's serial port, a level shifter and UART-to-USB converter is needed such as the TTL-232RG-VREG1V8-WE (<http://www.digikey.com/product-search/en?pv493=313&FV=fff40018%2Cfff804dc&mnonly=o&newproducts=o&ColumnSort=o&page=1&quantity=o&ptm=o&fid=o&pageSize=25>).

Once the Hardware is connected, the serial port for the TX_DBG will be enumerated on the PC.

- i.e. the COM13 in the following example represents the serial port connected to the TX_DBG pin of the CC256x.



Software Requirements

The Logger tool is part of the Wireless Tools package which can be found [here](http://www.ti.com/tool/wilink-bt_wifi-wireless_tools) (http://www.ti.com/tool/wilink-bt_wifi-wireless_tools). Download and install Wireless Tools to install Logger.


After you have successfully installed Logger tool without any errors, the Logger tool can be used to connect to the CC256x device.

- Download supporting files (XML and ILI) for the CC256x device. The latest ILI and XML files can be downloaded along with the service pack.
 - CC256xB-BT-SP: Download link for CC256xB, CC2564MODN and CC2564MODA (<http://www.ti.com/tool/cc256xb-bt-sp>)
 - CC256xC-BT-SP: Download link for CC256xC (<http://www.ti.com/tool/cc256xc-bt-sp>)

Setting up the Bluetooth logger

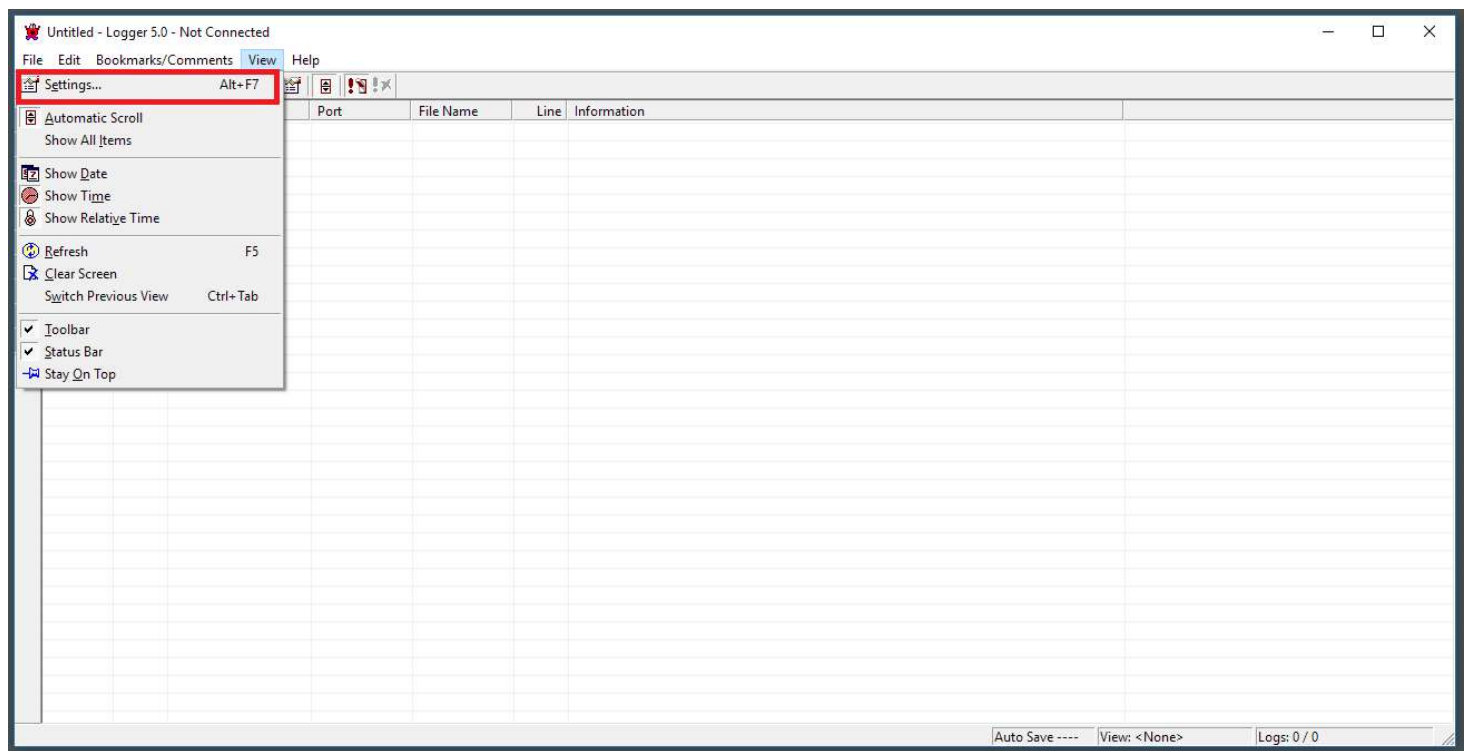
- Open the Logger application.



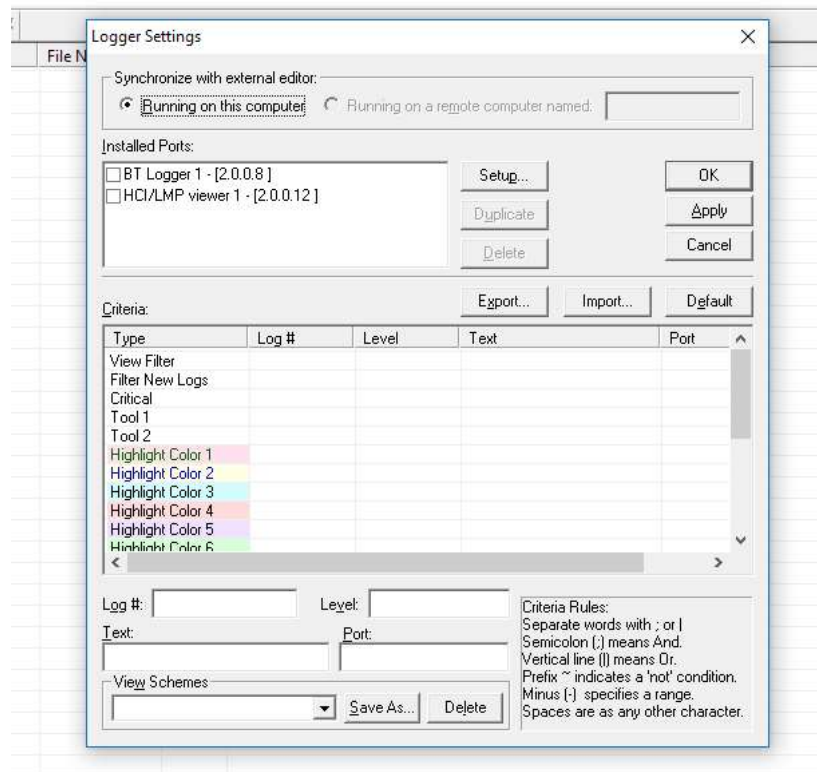
 **Note:** While capturing the CC256x logger data, it is best to start capturing before the CC256x initializes. Moreover, it is also required to capture both BT Logger and HCI/LMP viewer traces to ensure that all the relevant log traces will be recorded in the logs.

BT Logger Traces

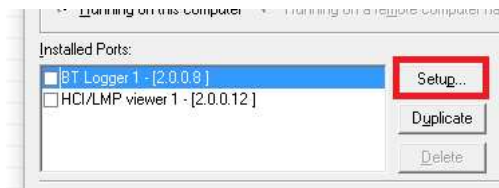
- From the menu bar of the main working window, click on the view->Settings... (Alt+F7).



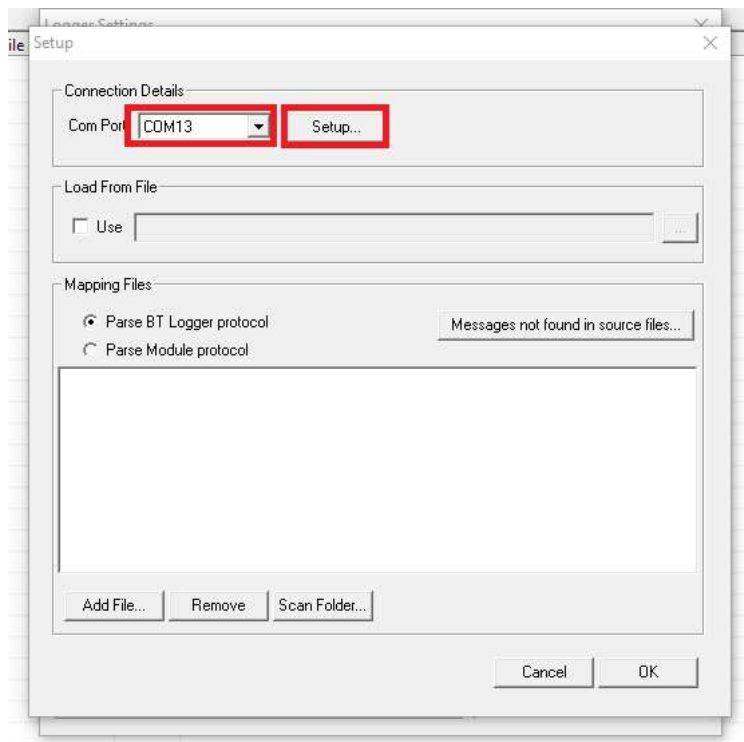
The Logger Settings dialog box will pop up.



3. Select the BT Logger 1 under the Installed Ports list and click on Setup... button.

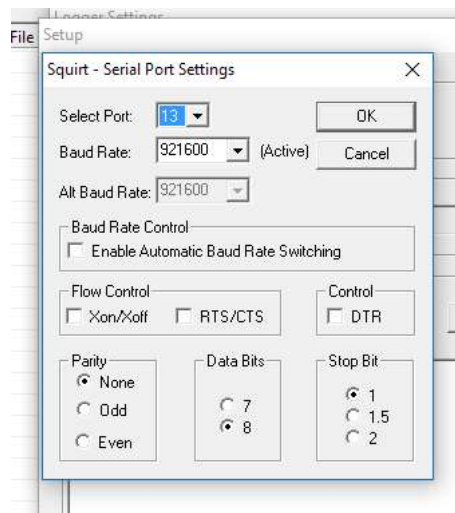


4. The Setup Dialog Box will pop up. Select the COM port that is connected to the TX_DBG pin of the CC256x.

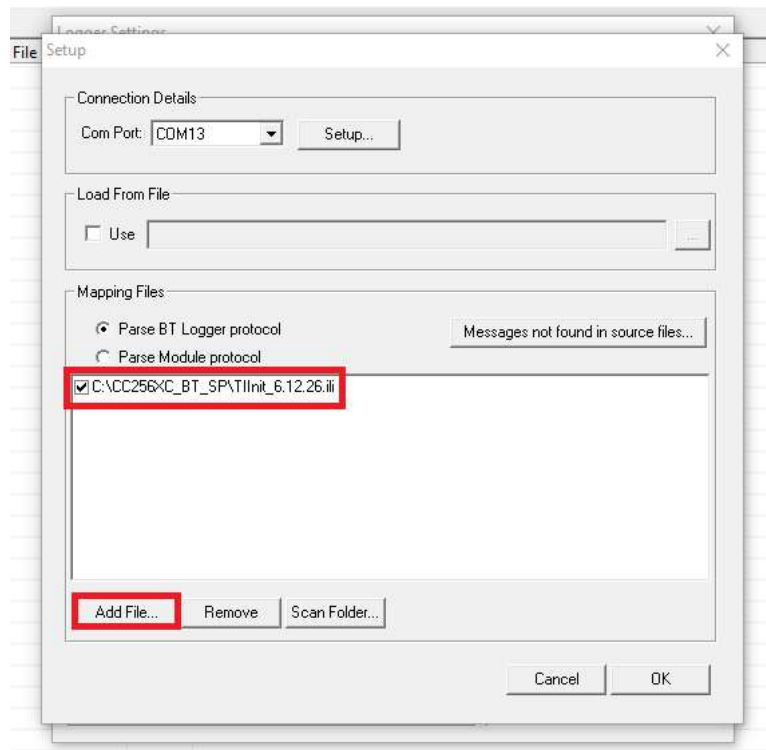



 **Note:** Make sure the COM port number is less than 50. If not, change the COM port number to a lower value from the control panel. Reference (<http://www.sealevel.com/support/article/AA-00441/o/How-to-change-asynchronous-serial-COM-port-assignments-in-Windows-Device-Manager.html>)

5. Setup the COM port for the following settings and click OK.



6. Under the Mapping Files section of the Setup Dialog Box, click on Add File... and select the appropriate ili file for the CC256x device.

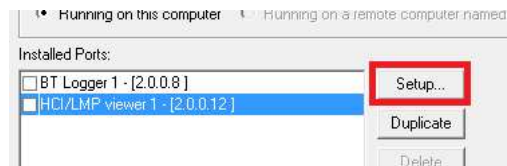


 **Note: Make sure that only one ili file is checked.**

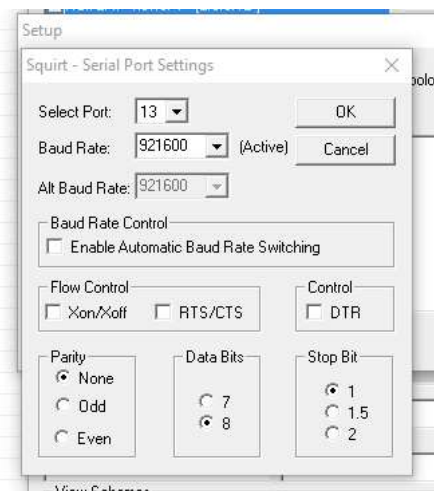
7. Click **OK** to apply the changes to the Setup Dialog Box for BT Logger port. Next, configure the HCI/LMP Viewer.

HCI/LMP viewer Traces

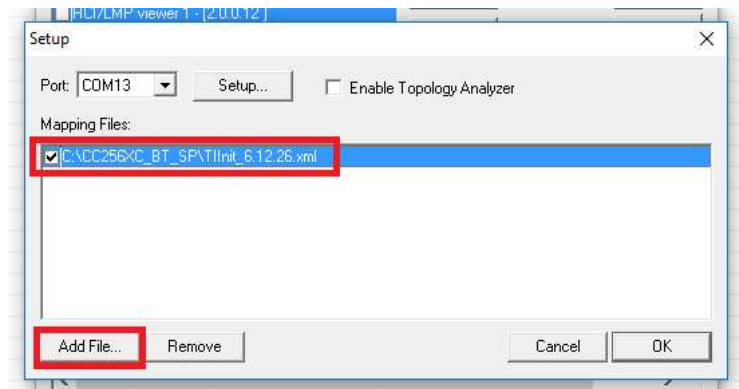
8. In the **View->Settings** window, select the **HCI/LMP viewer 1** under the Installed Ports and Click on **Setup....**




9. Setup the TX_DBG COM port with the same settings used in step 4.



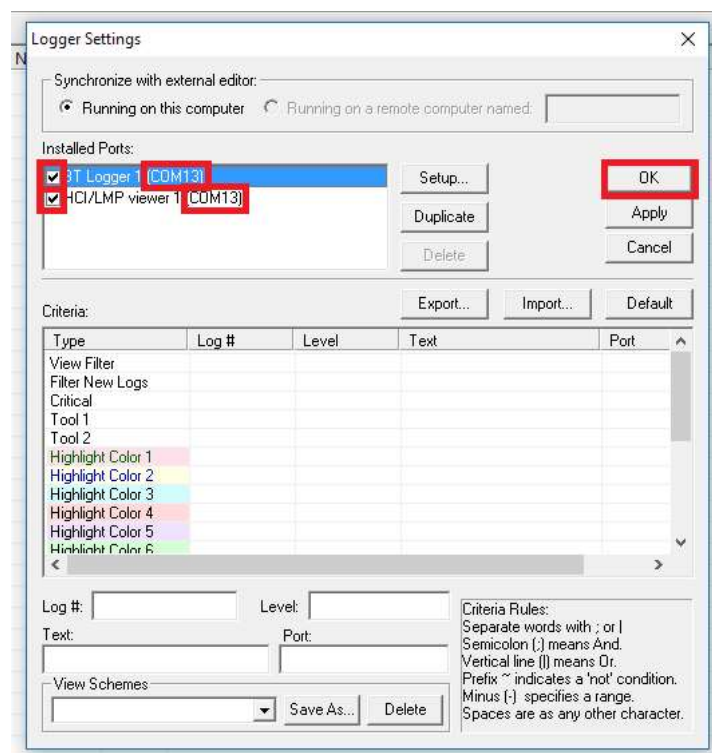
10. Select **Add File...** and select the appropriate *.xml file for the CC256x device.



 **Note: Make sure only one XML file is selected.**

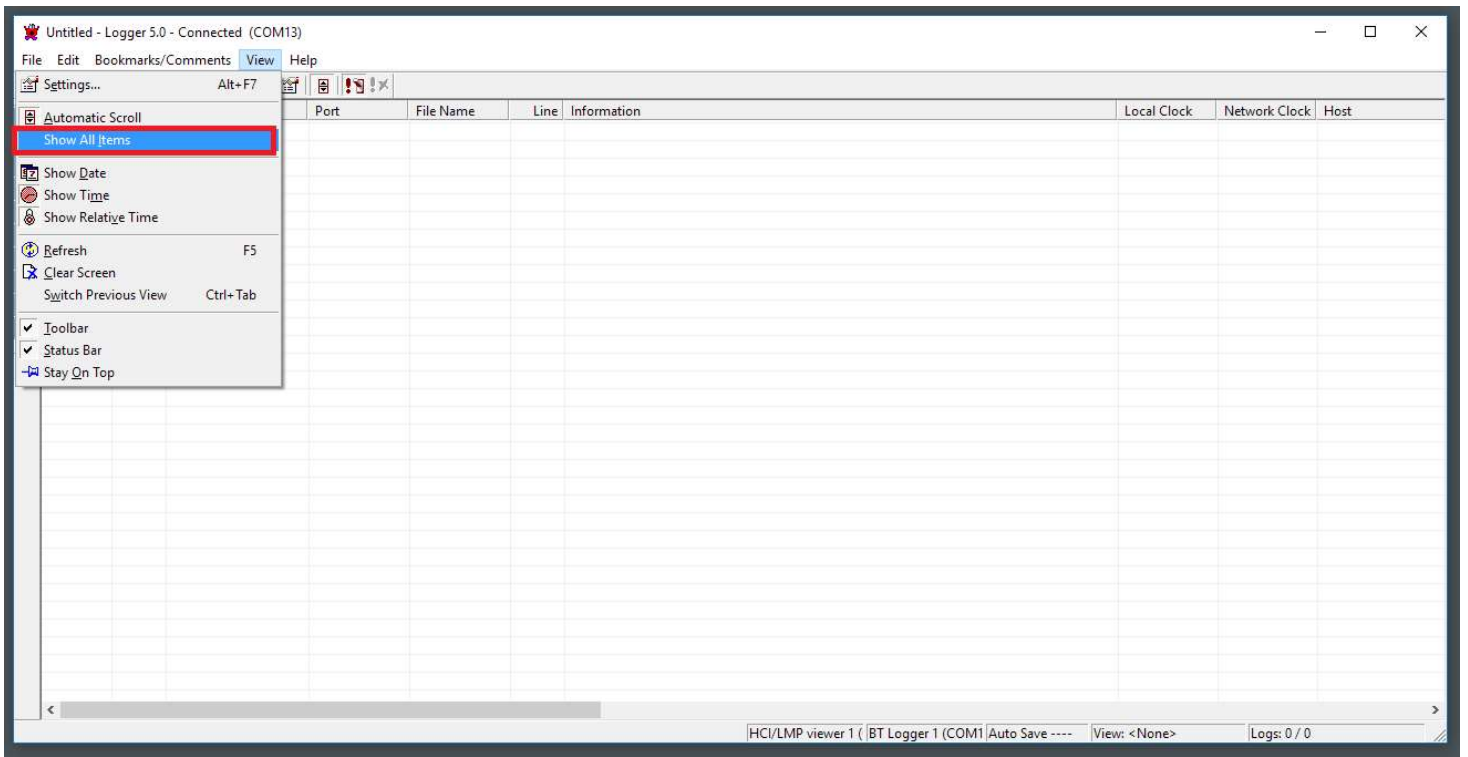
11. Click **OK** to apply the changes to the Setup Dialog Box for the HCI/LMP viewer.

12. Make sure that both **BT Logger 1** and **HCI/LMP viewer 1** ports are checked and the COM port is displayed next to both of them. Click **OK** to apply changes and close the Logger Settings.



Capturing the logs

13. After both BT Logger 1 and HCI/LMP viewer 1 ports have been setup with the correct configurations, select **View->Show All Items** to disable any filters.



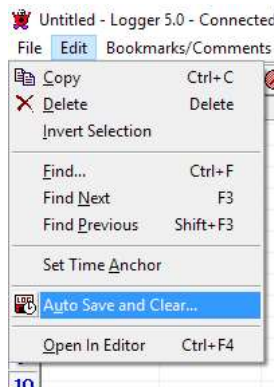
Note: If capturing the logs for a long period of time (i.e. more than an hour), make sure to use the **Edit->Auto Save and Clear...** option . If the capture file is too large, it may crash the PC. The Auto Save and Clear option will prevent such a crash. Please refer to the Appendix section below for more details.

14. Power on the Bluetooth device with CC256x. An initialization sequence like the following example will be captured in the Logger window.

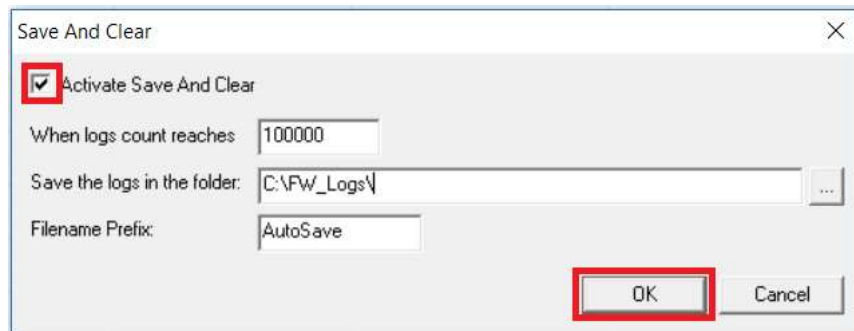
15. When all the relevant traces (BT Logger and HCI/LMP viewer) for the instance are captured, use **File->Save As...** to save the logs as a *.lgr file.

Appendix - Auto Save and Clear

When capturing the logs for a long period of time (for example several hours), it is best practice to use the Auto Save and Clear feature of the logger. Doing so prevents a single log file from getting too large and helps keep the logs organized for a long capture. To setup the Auto Save and Clear, use **Edit->Auto Save and Clear...** to open the Save and Clear window.



After setting up the parameters like below, click OK.



Note: When the log capture is complete, save the last log as mentioned in the step 15.

1. switchcategory:MultiCore=

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