Onesmi ISP Tuning Application Documentation

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Description:

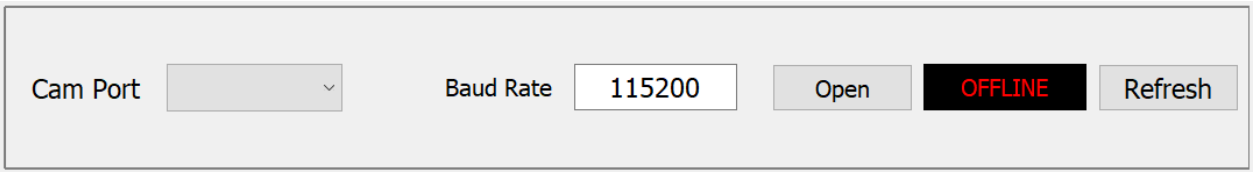
This application was made to replace and improve upon the old ISP tuning interface at Karel. The application was developed in Qt 5.13 with C++ by Berk Özkan in July of 2023. The improvements include database features to store changes, a table view feature, and import/export for all saved registers.

Notes:

- When using “Read” command, if successful, the camera will always return 2 byte data along with the “OK” signal. Even when reading 3 or 4 byte registers.

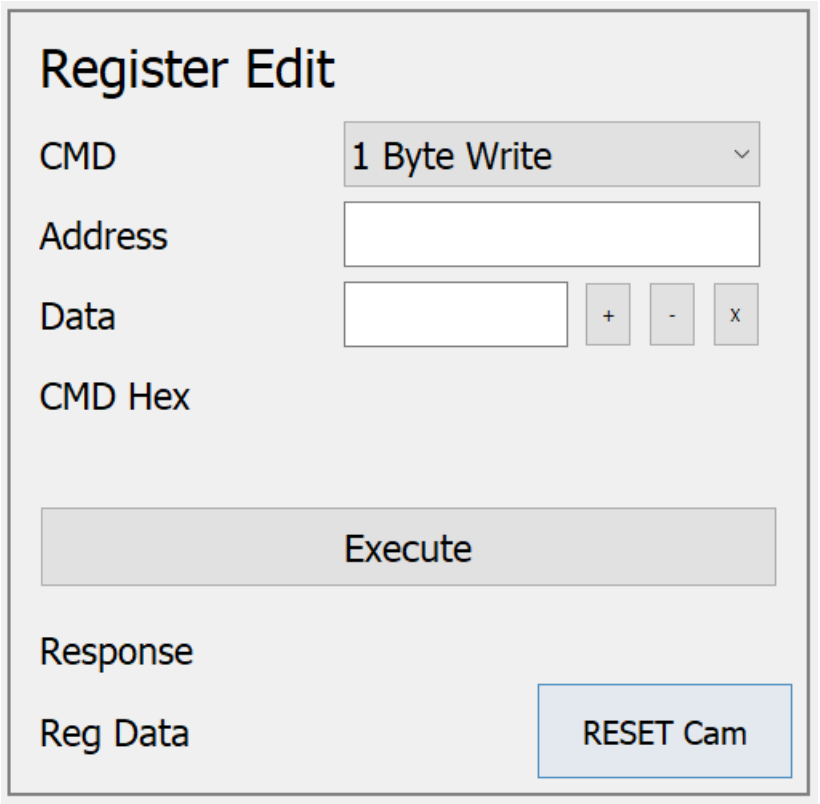
User Manual

Serial Port Connection:



- The dropdown menu will list all possible port connections. The “Refresh” button will look again for any available ports.
- The baud rate is a standard 115200, which is the current requirement for the Onsemi AS0149AT camera.
- The “Open” button opens the port connection if baud rate and port number are selected.

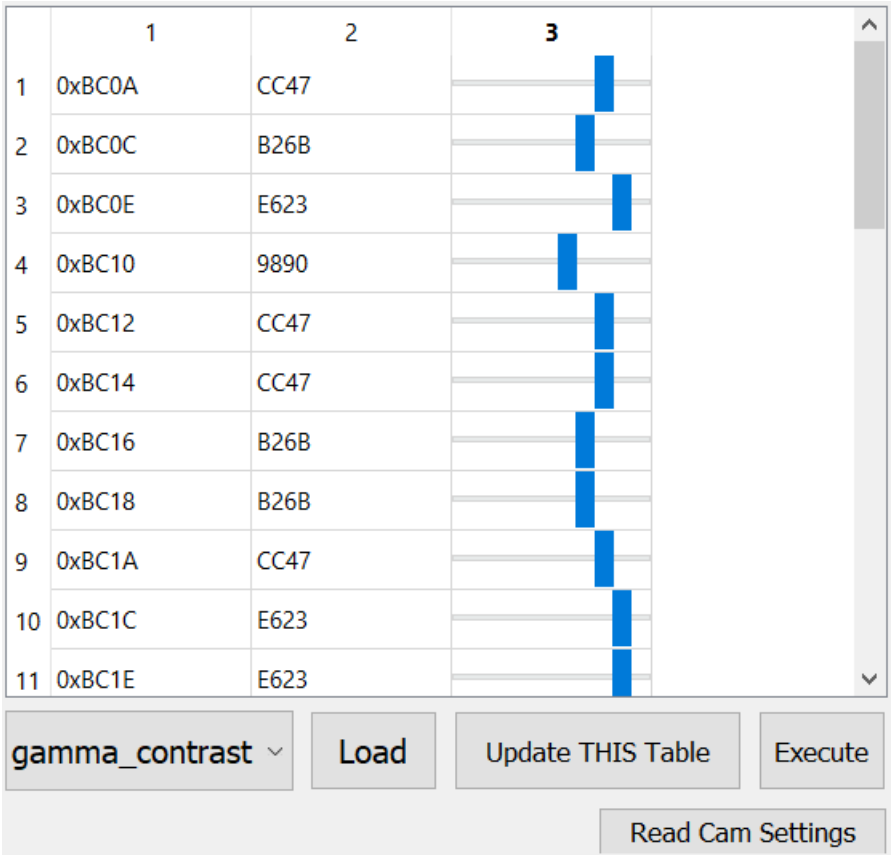
Register Edit:



Using the “Register Edit” section you can edit registers individually.

- “CMD” asks you to choose between “Read” and “1-4 Byte Write” commands.
- “Address” asks for a 4 long string of characters. A “0x” is not needed for the input.
- “Data” asks for data to write to the camera. If you are trying to “Read” then you can leave this blank-data will not affect the command.
- “+”, “-”, and “X” are to add, subtract, and clear the data respectively.
- Once “Execute” is pressed CMD Hex will display the generated command.
- “Response” shows the status of the command, meaning it will display “OK” if command was sent successfully.
- “Reg Data” will display data that the camera returns.
- “Reset Cam” will completely reset the camera settings by calling the reset function of the camera.

Table View



- The drop down will give you all of the tables that are saved in the database. These include three customizable save files labeled “save_(1-3)” along with “Table X” corresponding to the Onsemi documentation.
- Once selected, you can use the “Load” button to display the data as seen above.
- The addresses are not editable, however, the data can be edited by hand in the second column or using a slider.
- The changes in the slider will reflect live changes, however to make them permanent you must “Update THIS Table.”
    - **Note:** If you reach a point where you want to reverse the changes you can “Load” the date from the table again and use the “Execute” to reset the changes up to your most recent save.
- Once changes are made, you NEED to press the “Update THIS Table” button to save the changes.
- “Execute” will load all of the data from the CURRENT table only onto the camera.
- “Read Cam Settings” will get all of the addresses from the CURRENT table only and send a “Read” command for each of them. Using the responses it will re-populate column 2. Again, “Update THIS Table” should be used to save changes, and changes in the slider values can only be viewed after loading the table again with the “Load” button.

Database

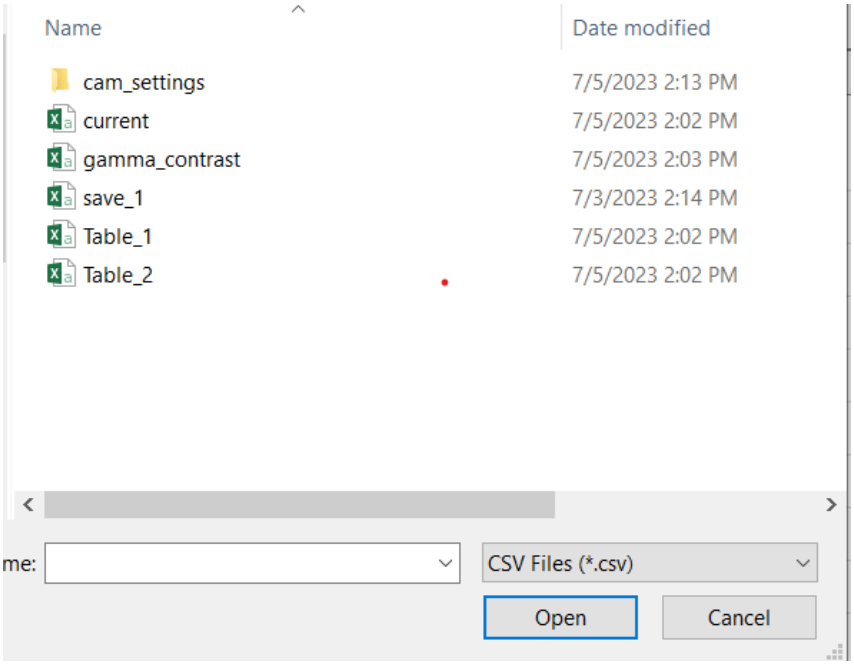
You can either import/export a single csv file or a group csv folder. However, the database will not add or remove tables so, imported files must match the names in the database.

CSV Format:

The columns should be as follows: “address, size, data” where all of them are text. CSV can be opened and created using Excel.

Import:

- The “Import (Single/All)” button will prompt you to choose a file. “Single” will allow you to select a csv and “All” will prompt you to choose a folder containing multiple csv.



If you select a single csv it will look for the corresponding table name and replace its data with the import file. If the names of the files don’t match then the import will not be successful. Similarly, if you select the all option then for each table in the folder the program will load the data if the table names match.

Note: If you wish to clear a table you can upload an empty csv

- When “Importing Single” whichever file is currently selected will be imported into.

Export:

- You can export a single csv or all at once.
- Whichever file is currently selected will be exported.
- A useful way to use this feature would be to export all into a save folder, which you can Import at a later data, thereby saving your camera data.

***** This will only work on x32 machines, I think. *****