ams

Eval Kit Manual

AS7265x Multispectral Chipset

Dashboard Application User Guide

Content Guide

1   General Description

This Application Note describes the evaluation of AS7265x Multispectral Chipset with ams Spectral Sensor Dashboard application running on a personal computer system.

2   Installation

The ActiveState Tcl is required to run the Dashboard software. The free community edition of ActiveState Tcl is provided within the evaluation kit. Please install it from the USB Stick provided by ams evaluation kit. Please install it as an administrator. Also it is one time installation.

3   Operation

After the installation, click "ams_Spectral_Sensor_Dashboard_x.x.x.tbc" file provided with the kit to launch the Dashboard software. The x.x.x is the revision number of the software.

Figure 1. ams Spectral Sensor Dashboard Display After Startup
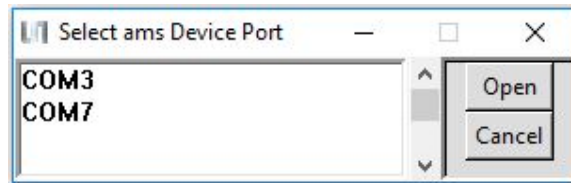
As shown above (Figure 1), the PC COMM Port select window will appear first after Dashboard launch (and the hardware is connected to the USB port).

To find which (if more than one showing) COMM Port to select:

- Open Windows Device Manager
- Click on "Ports (COM & LPT)"
- Find the "USB Serial Port (COMxx)", and use that to select the correct COMxx.

Once COMM Port is selected and the "18 Channel Sensor" page will open.

3.1   18 Channel Sensor Page

The 18 Channel Sensor page allows you to read 18 channels raw data from AS72651, AS72652, and AS72653 devices. It also provide controls for the Update Mode, LED Control, and Status. It is equipped with a section to observe the Raw and Calibrated Data in 18 channels and special function to sort the data in the order of Channel, Wavelength and Spectrum. Clicking the "Sample" button will update the displayed metrics once with the most current data. Selecting "Continuous", the "Sample" button will change to the "Start" button. Click the button to enable a display of continuously update metrics. If "Stop After" is not used, which is the sample limit, sampling will not stop.

- The "LED0" control sets AS72651 indicator LED current to on (1mA) or off as desired. It cannot be set once continuous sampling is set so should be setup prior. Also, the indicator LED flashes during AS72651 firmware updates regardless of the "LED0" control setting.
- The "LED1" control sets AS72651 onboard LEDs current to 12.5mA, 25mA, 50mA, 100mA or OFF as desired. It cannot be set once continuous sampling is set so should be setup prior. The "LED2" and "LED3" controls set AS72652 and AS72653 onboard LEDs current. By default onboard LEDs are not installed. The LED should be installed based on the application. The place holders, D9/D10/D12/D13, are for LEDs.

- The "Status" control give you the time of last sample and display the number of samples read in the "Samples" control.
- The 18 Channel Sensor Values displays the current raw data.

Figure 2. 18 ChannelSensor Page[1]
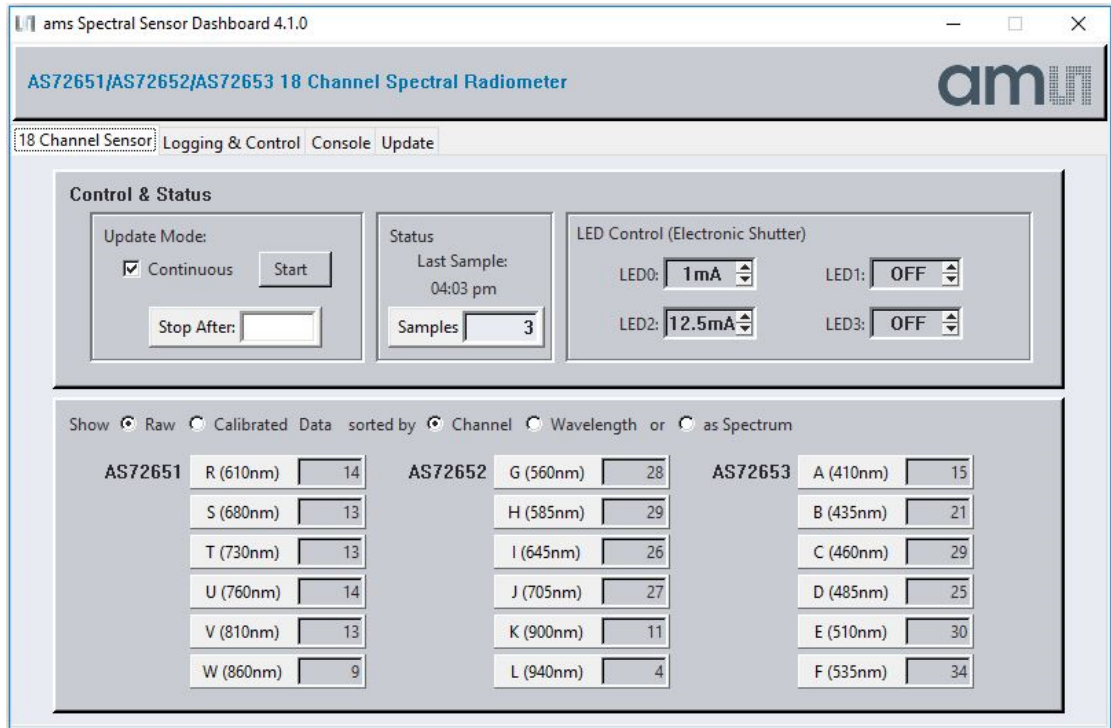
Spectrum function is implemented to plot the graph based on the sensor data reading at its corresponding wavelength.

- User can select plotting based on selecting Raw data or Calibrated data.
- "Lock" checkbox gives the flexibility to lock a range of amplitude for sensor readings.
- "Spline" checkbox gives the ability to select between the line graph and spline graph. Spectrum displays plotted Spline graph with Raw data is shown in Figure 3.

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[1] In case of incorrect displays or moved menus, please stop the Dashboard software. Start "Tcl – Installation directory \ bin \ wish86.exe, select the parameters "/ Properties / Compatibility" by clicking the right mouse key, select "Override high DPI scaling behavior" and "In Scaling performed by: System". Then click ok and start the dashboard software again.

Figure 3. Spectrum
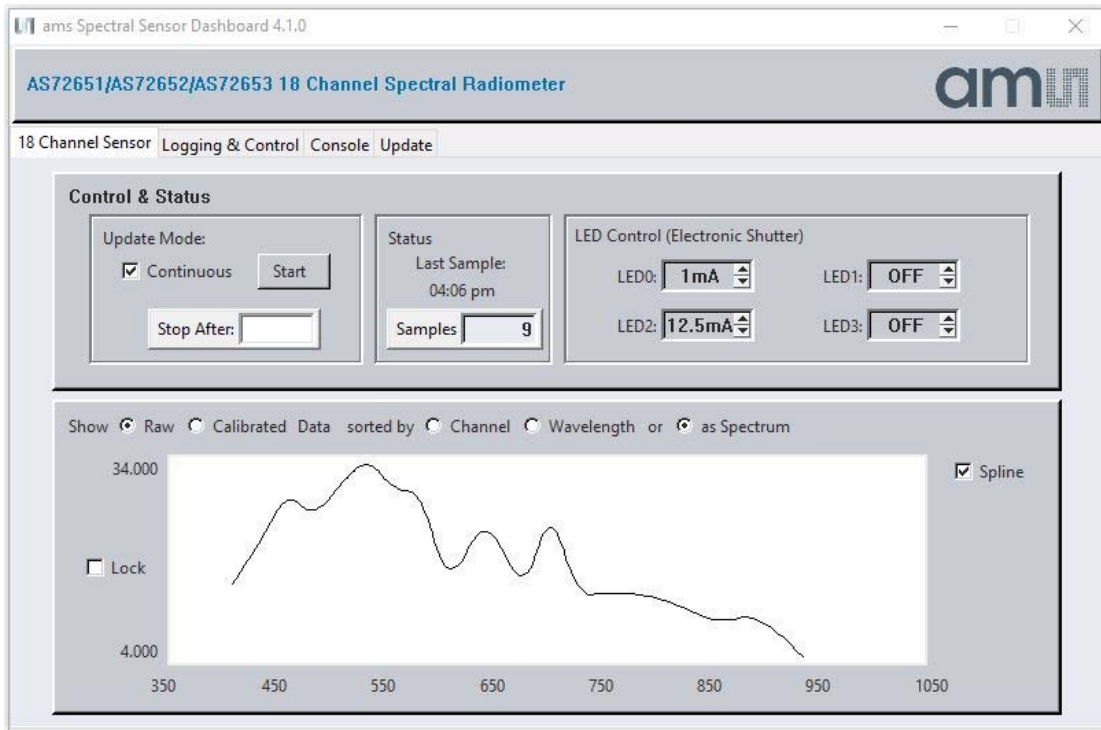
3.2   Logging & Control Page

The "Logging & Control" page give you more information about AS7265x Multispectral Chipset as well as more controls. It includes "Logging" and "Sensor Control".

- If desired, click the "Open Data Log " to store AS7265x Multispectral Chipset data (Excel CSV format). When the sampling is done, close the log file to store the data. Or set the number in the "Stop After" control on previous page and that will automatically store the data.

- Modify the "Sensor Control" for Integration Time and Gain as needed by typing in the value or Up-Down arrow.

- "Factory Reset" reset stored values and parameters like Gain, Integration time, Samples and LED Control to 'Factory' default values.

- The "Device" control provide more information about AS7265x Multispectral Chipset

Logged Data Format (when data file is designated and logging is enabled, 2 samples)

| #	R	S	T	U	V	W	G	H	I	J	K	L	A	B	C	D	E	F	Int Time	Gain	Temp AS72651	Temp AS72652	Temp AS72653	Timestamp
1	154	2	3	2	5	1	7	26	12	10	3	1	7	50	33	10	12	122	59	0	26	27	25	20180316083231
2	570	9	11	7	20	6	27	95	45	37	10	5	27	184	120	38	45	446	59	1	26	27	25	20180316083239

As shown above, the logged test data is saved in Excel CSV format. Data is saved in the user specified file name and location. Timestamp is YYYY/MM/DD/seconds_since_midnight.

Figure 4. Logging & Control Page
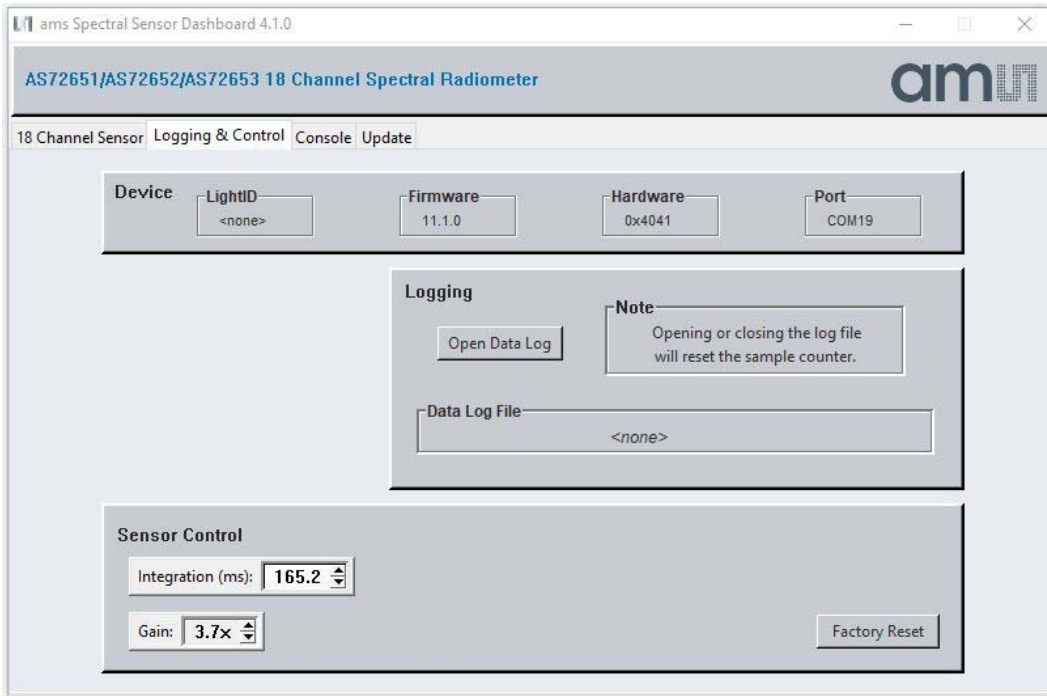
## 3.3   Console Page

Figure 5. Console Page
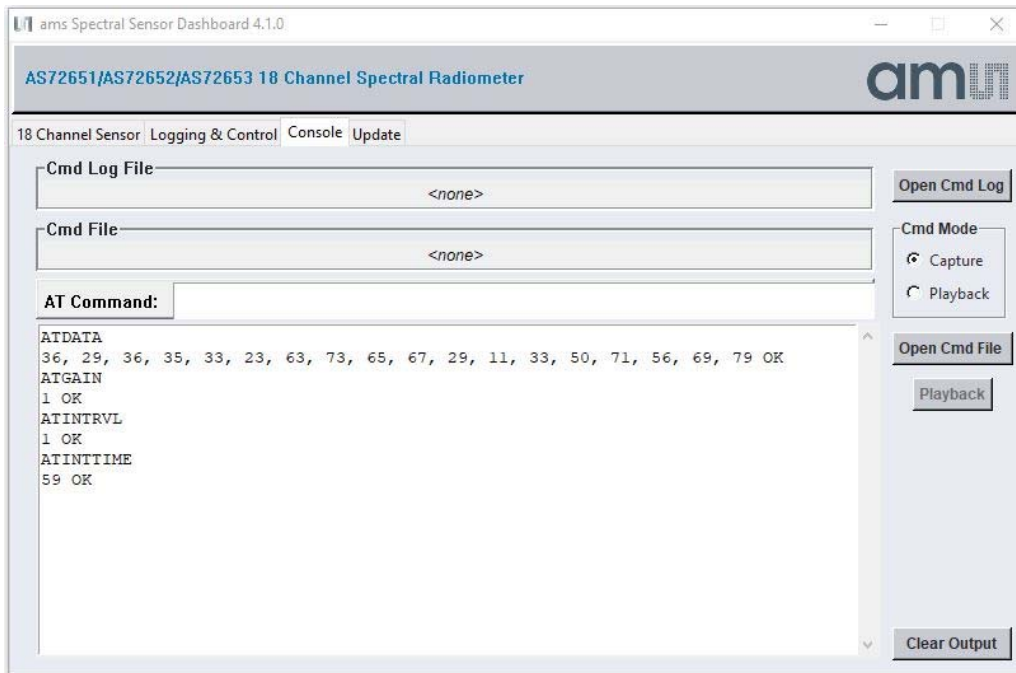
AT commands could be both observed and entered on the "Console" page.

- After a control is changed or data is sampled the resulting AT Commands can be observed on this page and optionally captured on the computer running Dashboard.

- And if desired commands can be entered on this page, in the AT Command line at the top of the page or via the Playback of previously captured commands.

- Use "Open Cmd Log" to create a ".txt" file in a desired folder. Once "Close Cmd Log" is pressed all output from the log window will be stored in log file.

- In Capture mode use "Open Cmd File" to create ".cmd" file. AT Commands typed in will be saved on pressing enter, then "Close Cmd File" to Capture the entered AT Commands. The command file can be changed in a windows text editor e.g. to add or remove AT commands. In Playback mode use "Open Cmd File" to open the saved ".cmd" file, then "Playback", to execute the stored commands.

- "Clear Output" is used to clear all the previous AT Command measured in Console Page

3.4   Update Page

Figure 6. Update Page
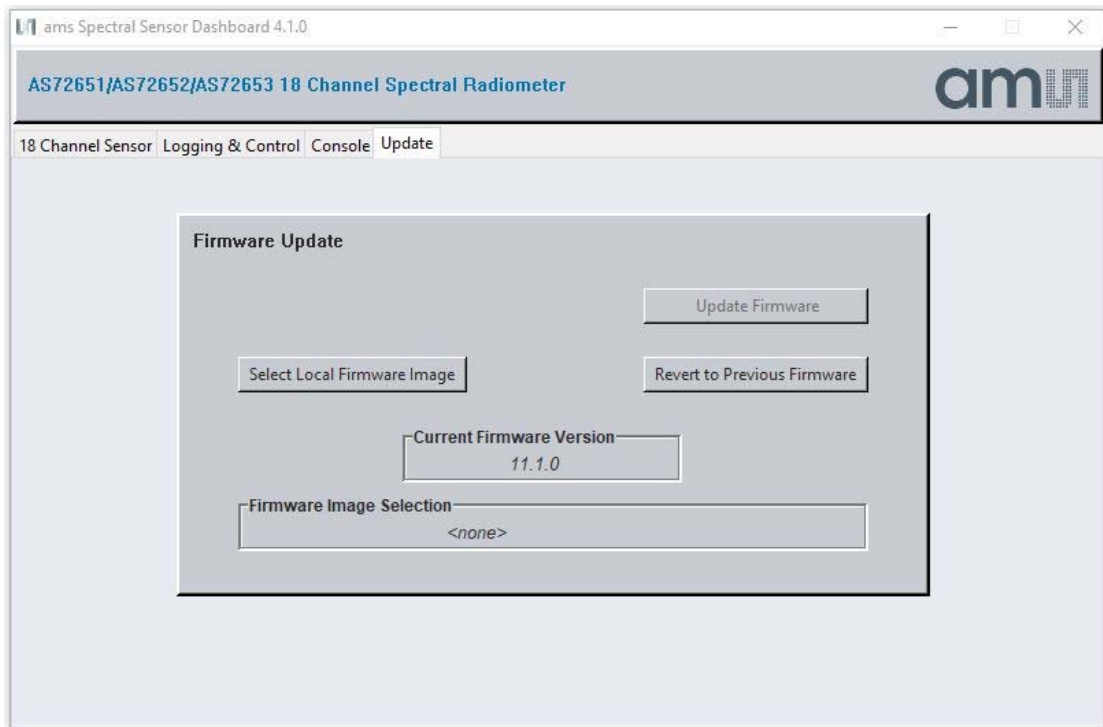
As shown above (Figure 6) on the Update page, AS7265x Multispectral Chipset firmware can be updated from the Dashboard:

- Obtain the latest "*.bin" AS7265x Multispectral Chipset firmware file[2] from ams, via email or USB flash drive, etc.

- Store the "*.bin" file on the computer.

- Use the "Select Local Firmware Image" button as shown above to navigate to the "*.bin" file.

- Next, select the "Update Firmware" button to start the update procedure, once the update is finished the "Current Firmware Version" is updated with new firmware.

- After Firmware update is complete close the Dashboard software, cycle power on the hardware by unplugging and re-plugging the USB connection and then re-launch Dashboard.

- "Revert to Previous Firmware" can be used to degrade back to previous version.

Please note: FW11.0.0 or later is required to support the firmware update feature with this GUI. Also a change in PIN configuration for the new firmware 11.xx compared to the old version. Therefore might exists a special firmware variant for Moonlight which is not hardware compatible to standard firmware 11.x.x

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[2] The given manual for the software is based on the hardware release 1V1 generation 1 of the Multispectral Chipset evaluation kit. Make sure, the update file for the firmware is compatible with these releases. For more details see the application note "AS7265x Design considerations".

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4   Copyrights & Disclaimer

5   Revision Information

Changes from previous version to current revision 4-01 (2018-May-04)
Updated Screen Shots with latest GUI
Added newly added functionalties
Added FW revision number for firmware update feature
Standard availability
Multispectral Sensor Kit Generation 1 and limitations

Note: Page numbers for the previous version may differ from page numbers in the current revision.

Correction of typographical errors is not explicitly mentioned.