

Setting Up and Accessing MDR-3 Motor Position Metadata

System Overview

The MDR-3 is equipped to output absolute motor encoder position or lens distance information metadata. The data can be read in real time via either serial port, or written to the USB port to store on a flash drive. Data is only written while the camera is running. This metadata can be used in post-production as frame-by-frame F, I, Z, and Aux lens/motor positions during a take.

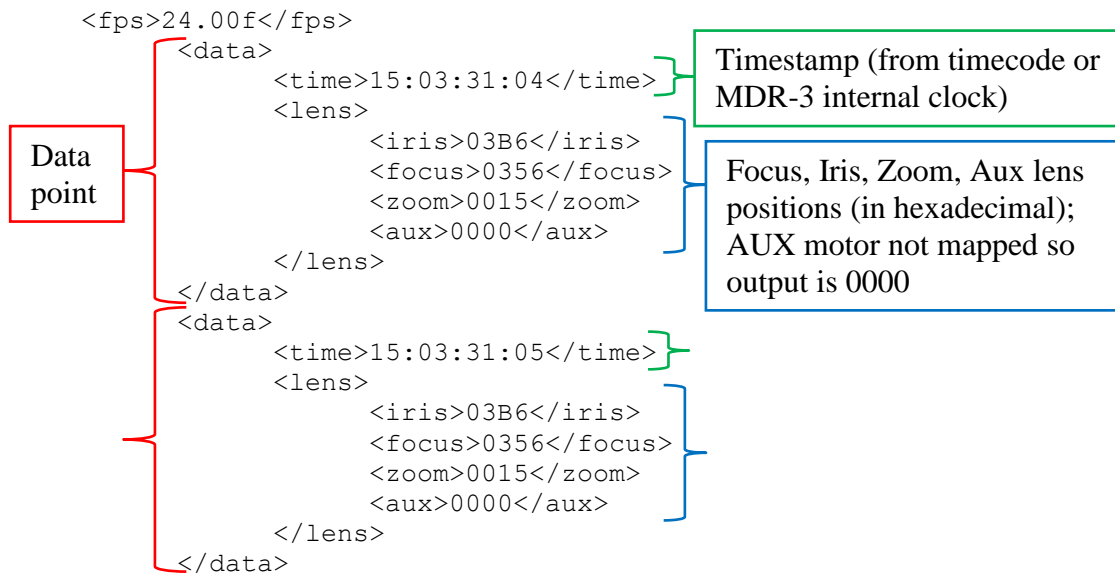
A mini USB On-the-Go (OTG) adapter connects the thumb drive to the MDR-3's mini USB port. The metadata can be jammed with an external timecode source, such as a Clockit device, and the source's timing information will output alongside the motor position data stream.

The MDR-3 will automatically begin writing metadata to the serial and mini USB ports when the camera is triggered, and automatically stop writing data when the camera stops. Each file is named with the timestamp taken when the camera begins rolling.

Data Retrieval and Processing Through USB Port

Before connecting the flash drive to MDR, **ensure the USB drive is formatted FAT32**. Next, make sure the mini USB adapter you're using is an **On-the-Go certified adapter**. A standard mini USB cable will not work. We sell these adapters, or this one will work: <http://amzn.com/B00JK1OFOM>. These adapters are sometimes called USB Host Mode adapters.

The MDR-3 outputs an XML file. XML is a common file format for large sets of tabular data and can be understood and evaluated by spreadsheet programs such as Microsoft Excel. The raw XML data file written by the MDR-3 is of the following format:



The data output is a hexadecimal representation of the lens setting. **Motors that have not been mapped in the HU3 lens menu output 0000 for the position.** HU3 firmware 2.16 or above required for Iris and Zoom mapping; MDR-3 firmware 1.07 or above required for lens position data. Earlier MDR-3 versions output the raw motor encoder positions, and require a lookup table to convert to lens positions.

We have a conversion program that imports the XML file and outputs both a metric and imperial converted file that has the lens positions in meters and fractional feet. The download link for that program is: http://prestoncinema.com/Upgrades/Preston_Meta_Convert.EXE.

XML File Conversion

The application (Preston_Meta_Convert.EXE) will prompt for a XML file containing the Metadata.

- 1) Navigate and click on the XML file, and click [Open].
(or Click [Cancel] to abandon the conversion).
- 2) Two files will be automatically generated, in the same folder location as the XML:
Filename_Imperial.csv
Filename_Metric.xml
Where Filename is the original name of the XML file

These ".csv" files (Comma Separated Values), can be loaded into programs such as Excel, where the first row is the descriptive titles, followed by rows of metadata (with a timecode stamp on each row).

Data Retrieval and Processing Through Serial Port

The MDR-3 writes the metadata to the serial port in real time while the camera is rolling. The output format is the same as for the USB port (hexadecimal). You can develop an application to read and process this information however you need, using our serial protocol to communicate with the MDR-3. That protocol is described in this document:

http://prestoncinema.com/Upgrades/RS-232%20communication%20protocol%20Rev1_9.pdf

The serial protocol allows for selection between absolute motor encoder position and actual lens position output streams (only applicable when pulling data from serial port).