Magic Lantern 0.2 for Canon 550D, Firmware 1.0.9 – User's Guide

December 15, 2010

Features

- GUI menus: press the ERASE button to display them

- Bit rate control (QScale parameter) for the H.264 encoder

- Display time remaining during video recording

- Zebra stripes for overexposed / underexposed areas

- Simple intervalometer

- Remote release with the LCD sensor (i.e. put your hand near the LCD to take a pic)

- AE bracketing (like on 5D2 ML)

- Stack focus (see issues)

- Lens data computation

- Onscreen audio meters

- Manual audio gain, selectable input source

- Debug functions (event, property and debug logging, display CMOS temperature)

Known issues

- For stack focus, you have first to go to Live View, then to Play mode, make sure you have an image, then back to Live View.

- If you start the camera in LiveView mode, histogram and zebra may not show. If this happens, press MENU twice to get them.

- Sometimes the menu gets overwritten by Canon's drawing routines, or flickers.

- After closing ML menu, screen may not redraw automatically (half-press the shutter to trigger a redraw)

- Time remaining for video is meaningless if QScale control is enabled (maybe it should be calibrated with the real-time clock?)

- Rack focus does not seem to work.

- Playing with debug options may lead to strange behaviors of the camera (if it happens, restart it).

- Boot menu entries may be dangerous => be careful with them!

Menu options

Audio

[[File:AudioMenu-550D.png|thumb|right]]

Audio tweaks.

AudioMeter: ON/OFF Draw the audio meters or not.

Output vol (dB) Gain to external audio - currently this is the A/V jack (?) so not audible on just the camera

Analog Gain (dB) Gain applied to both inputs in the analog domain - intended as mic-type preamp, but always preferable to digital gain (unless you want different gain or run out of analog).

L-Gain and R-Gain (dB) Digital gain applied separately to the L and R channel.

AGC: ON/OFF Enable/disable Automatic Gain Control. Turn this to OFF to prevent hiss noise when recording silence.

Filters: ON/OFF Enable/disable digital audio filters (High Pass Filter, Low Pass Filter and stereo emphasis)

Inp Input source: Internal mic (dual mono); int L ext R; ext stereo; int L ext L+R (balanced).

Video

[[File:VideoMenu-550D.png|thumb|right]]

Video overlays: histogram, zebras, cropmarks, spotmeter.

Global Draw: ON/OFF Enable/disable drawing extra graphics elements (zebra, cropmarks, histogram, spotmeter, audio meters)

Histogram: ON/OFF Show a histogram for the luma (Y) channel of the LiveView image. Colorspace is YUV.

Zebras: ON/OFF Enable/disable zebra stripes, which indicate overexposed or underexposed areas.

ZebraThrLO, ZebraThrHI Thresholds for underexposure and overexposure. Brightness values are between 0 and 255.

CropM Enable/disable cropmarks. Todo: cycle to all available cropmarks. For now, select the cropmark from the config file, option "crop.file". See [[Cropmarks]].

ClrPreview: ON/OFF When shutter is half-pressed or DOF-preview is enabled, this clears all the overlays from the Live View display after 1 second. It allows you to compose the picture without any extra distractions. This works best when autofocus is assigned to the * button (from Custom Functions).

Spotmeter Measure brightness in the center of the frame, and display it as a percentage. Indicator is at the bottom on the screen, centered horizontally.

Shoot

[[File:ShootMenu-550D.png|thumb|right]]

Functions for stills shooting.

IntervalTime Time delay for intervalometer, in seconds.

Intervalometer: ON/OFF Start/stop intervalometer.

LCD RemoteShot: ON/OFF Start/stop shutter release with the LCD sensor. To take a picture, put your hand near the LCD sensor.

This is useful for avoiding camera shake without extra $$$

To use it, select one of P,S,A,M modes, turn OFF Live View, and make sure "LCD auto off" is enabled (in the Canon menu, wrench 1).

You can also stop the intervalometer and remote shooting mode by pressing PLAY or MENU.

Brack

[[File:BrackMenu-550D.png|thumb|right]]

AE bracketing.

Test bracket Take a few pictures with the selected settings.

AE count Number of pictures to take.

AE step Number of AE steps between two shots.

How big is an AE step?

This feature is still buggy, and seems to work only in AV mode.

Focus

From the 5D2 guide: http://magiclantern.wikia.com/wiki/Magic_Lantern_0.1.6_User_Manual#Focus_menu

See also [[Focus distance]].

Debug

[[File:DebugMenu-550D.png|thumb|right]]

QScale Controls the H.264 QScale parameter, which affects video bitrate. Lower values mean higher bitrates. OFF should disable QScale control.

See [[Bit rate]] wiki page for details.

Default range is [-1 ... -16]. This can be changed from config file, but qscale is restricted to negative values only, due to limitations in config file parser.

QScale setting is not saved; it is applied only when you select this option from menu. It may be overwritten by camera firmware when changing video modes. When the camera starts, it is OFF.

Save config Save current settings to MAGIC.CFG.

CMOS temp Temperature of the CMOS sensor, in raw units.

Draw palette Tests the 8-bit bitmap palette, which is used for video overlays. See [[VRAM]].

Screenshot (10 s) Print screen after 10 seconds (it saves a BMP file). Only the bitmap overlays are included in the screenshot (i.e. no live view image).

Dump dmlog Saves a log which contains DebugMsg output. See [[Debugging Magic Lantern]] wiki page.

Toggle draw_prop Display property changes in real-time. See [[Properties]].

Toggle draw_event Display GUI events in real-time, and also inhibits most of them. See [[GUI_Events/550D]].

Some items from this menu may not be available in release builds, because they are potentially dangerous.

Boot

[[File:BootMenu-550D.png|thumb|right]]

Settings related to the Magic Lantern boot process.

Write MBR ??? partition a card with MBR (aka "erase it"?). MBR as in "Master boot record"?

Autoboot: ON/OFF Make the card bootable?!

Powersave Disable the powersave so that the LiveView never shuts off?

WARNING – this can cause problems with your sensor!

"'DO NOT LEAVE THE CAMERA ON CONTINUOUSLY."'

Some items from this menu may not be available in release builds, because they are potentially dangerous.

Configuration file

The configuration file (MAGIC.CFG) lets you tweak various hidden settings using a simple text editor (Notepad, gedit, vi...), and is also used to save Magic Lantern configuration from the GUI menu.

When you install Magic Lantern, it is recommended to start with a fresh configuration file (i.e. delete all *.CFG files from the card), because default settings may be changed in the new release.

Saving settings

From the Magic Lantern menu, choose Debug -> Save config. Your config file will be overwritten with current Magic Lantern settings. Comments from the file will be removed!

Hidden settings

These settings can not be changed from the ML menu, so they are documented
here:

```
# if set to 1, disable the bootdisk flag
magic.disable_bootdiskf = 0

# Cropmarks file (todo: move it to the menu... how to use FindFirst/FindNext?)
crop.file = B:/cropmark.bmp

# Draw a property value
debug.dump_prop = 0x1060003

# Controls the refresh rate for zebra & friends (delay in ms between updates)
zebra.delay = 1000

# Limits allowed for qscale control. Since negative values are not allowed in config file,
# put the absolute values here. Also, qscale can take now only negative values.
h264.qscale.max.neg = 1
h264.qscale.max.neg = 16

# Delay between clearing the overlay in Clear Preview mode
clear.preview.delay
```