

Exiv2 - Feature #1140

Canon EF-S 24mm f/2.8 STM

20 Dec 2015 00:46 - Anonymous Poster

Status:	Closed	Start date:	20 Dec 2015
Priority:	Normal	Due date:	
Assignee:	Robin Mills	% Done:	100%
Category:	makernote	Estimated time:	4.00 hours
Target version:	0.26		
Description			
This lens appears to be in the latest canonmn.cpp with tag value 4154, but my camera (Canon EOS 30D) with the lens doesn't report this tag value, instead reporting 65535 (hex FF FF) which isn't associated with the any lens name. exiftool also reports a generic 'Unknown 24mm' Lens ID, so maybe there isn't enough information provided to correctly determine this lens on this camera.			

Associated revisions

Revision 4133 - 20 Dec 2015 16:49 - Robin Mills

#1140 Fix submitted.

Revision 4134 - 20 Dec 2015 17:30 - Robin Mills

#1140. Correction to r4132. Modified lens detection condition.

History

#1 - 20 Dec 2015 09:31 - Robin Mills

- Category changed from lens to makernote
- Status changed from New to Assigned
- Assignee set to Robin Mills
- Priority changed from Low to Normal
- Target version set to 0.26
- Estimated time set to 4.00 h

Thanks for reporting this. Niels, our wonderful *King Makernotes* has gone back to college (in addition to his full-time demanding job) and I've taken over this challenge. So patience I'm on a learning curve. However I've solved a couple of challenges and so I am optimistic of success.

There was an issue with a Sigma Lens on a Pentax in which the LensID=0xffff (-1). The lens detection required a "heuristic" to differentiate several types of lens with LensID == -1 and Phil (of ExifTool) explained it and we got that resolved. I prefer the term *magic* to "heuristic". The *magic* is some code that sniffs parts of the metadata to deduce how some tags are reported.

Thanks for the test image. Here's what I see on the trunk:

```
$ exiv2 --grep lens/i -pa http://dev.exiv2.org/attachments/download/866/IMG_5604.JPG
Exif.CanonCs.LensType          Short      1  (65535)
Exif.CanonCs.Lens              Short      3  24.0 mm
Exif.CanonCf.LensAFStopButton  Short      1  2304
Exif.Canon.LensModel           Ascii      64
```

I've run this through exiftool:

```
$ curl --silent -O http://dev.exiv2.org/attachments/download/866/IMG_5604.JPG
$ exiftool IMG_5604.JPG | grep -i lens
PrintLensID begin
PrintLensID B
Lens Type          : n/a
Lens AF Stop Button : AF stop
Lens Model        :
Lens              : 24.0 mm
Lens ID           : Unknown 24mm
Lens              : 24.0 mm (35 mm equivalent: 38.4 mm)
```

I don't see a lot of difference. Exiftool reports Lens Type : n/a and we report -1. And about the same with LensAFStopButton. "Lens Model" is empty on both outputs.

Looking in the code, I've found the 4154 which is associated with your lens.

```
$ grep EF src/canonmn.cpp | grep 24 | grep STM
    { 4152, "Canon EF 24-105mm f/3.5-5.6 IS STM" },
    { 4154, "Canon EF-S 24mm f/2.8 STM" }
```

However 4154 is not in your metadata. Here's what I see (printing the 'vanilla' values):

```
$ exiv2 --grep Lens/i -pv http://dev.exiv2.org/attachments/download/866/IMG_5604.JPG
0x0016 CanonCs      LensType          Short            1 65535
0x0017 CanonCs      Lens              Short            3 24 24 1
0x0009 CanonCf      LensAFStopButton Short            1 2304
0x0095 Canon        LensModel         Ascii            64
```

There must be existing *magic* in the code to convert 'CanonCs.Lens from 'Short 3 24 24 1' to '24.0 mm'. However I don't see any data to explicitly identify it as *Canon EF-S 24mm f/2.8 STM*. I see there are tags which are probably unique to your camera.

```
610 rmills@rmillsmbp:~/gnu/exiv2/trunk $ exiv2 -pa --grep Model/i --grep Lens/i --grep Firm/i IMG_5604.JPG
Exif.Image.Model          Ascii            14 Canon EOS 30D
Exif.CanonCs.LensType     Short            1 (65535)
Exif.CanonCs.Lens         Short            3 24.0 mm
Exif.Canon.FirmwareVersion Ascii            32 Firmware 1.0.5
Exif.CanonCf.LensAFStopButton Short            1 2304
Exif.Canon.ModelID        Long             1 EOS 30D
Exif.Canon.LensModel      Ascii            64
611 rmills@rmillsmbp:~/gnu/exiv2/trunk $
```

Here's my proposal:

- 1) I cannot modify Exif.Canon.LensModel as we are correctly reporting it as 64 bytes with nothing in it.
- 2) I can modify the *magic* that converts Short 3 24 24 1 into '24.0 mm', provided:

- a) Image.Model is Canon EOS 30D
- b) Canon.FirmwareVersion is 1.0.5
- c) This change does not break our test suite.

Are you happy with my proposal?

#2 - 20 Dec 2015 16:56 - Robin Mills

- % Done changed from 0 to 80

Fix submitted [r4133](#) and [r4134](#).

The important part of the fix is in src/canonmn.cpp#1588:

```
// 1140
if( metadata->findKey(ExifKey("Exif.Image.Model"      ))->value().toString() == "Canon EOS 30D"
&& metadata->findKey(ExifKey("Exif.CanonCs.Lens"      ))->value().toString() == "24 24 1"
&& metadata->findKey(ExifKey("Exif.CanonCs.MaxAperture"))->value().toString() == "95" // F2.8
){
    return os << "Canon EF-S 24mm f/2.8 STM" ;
}
```

May I ask you to build and run this code on a collection of images taken with this camera + lens combination.

I have extracted the metadata from your test image and added it to our test suite for regression purposes. Please let me know if you are unhappy with your data being used in this way.

#3 - 21 Dec 2015 20:34 - Eric Brown

It seems to work on a collection of pictures that I took on a couple separate days. There also appears to be a "Canon EF 24mm f/2.8 IS" lens for sale (http://www.bhphotovideo.com/c/product/843009-USA/Canon_5345B002_EF_24mm_f_2_8L_IS.html). I'm not sure how its EXIF data differs or whether it would be incorrectly assigned to the non-image-stabilized USM lens. I don't have access to that lens.

After some further investigating, it appears as though the firmware version that I have (1.0.5) doesn't store the lens type for any lens that I have but that the updated firmware (1.0.6) does store it. I haven't tried to update the Firmware or see what happens, but perhaps the patch should include a check for the 1.0.5 firmware, since the *magic* (hopefully) isn't needed for an update camera.

#4 - 21 Dec 2015 21:21 - Robin Mills

Gosh, Eric. I'm learning as we go here. If it's working on your files, let's leave it be and not include the firmware check. When I added the code yesterday I thought "oh, the firmware could be updated and break this code.". So let's not try to forward guess the firmware.

The real fix is for Canon to use LensID == 4154 and then my *magic* will not be executed. Perhaps the 1.06 firmware will do exactly that and my *magic* is irrelevant.

I've marked this 80% complete. If a firmware change (or the non-stabilised version of the lens) causes an unhappy change in behaviour, please let me know (with test files) and I will investigate and remedy this situation.

If you're happy with my response, you'll see the bill I presented to Simon for helping him with 816: <http://dev.exiv2.org/issues/816#note-39>

Happy Holidays. Seasons Greetings.

Exiv2Logo.png

#5 - 13 Jan 2016 19:00 - Robin Mills

- *Status changed from Assigned to Closed*

- *% Done changed from 80 to 100*

As there has been no further incidents, I'm going to close this and mark it 100% resolved.

Files

IMG_5604.JPG	262 KB	20 Dec 2015	Anonymous Poster
IMG_5604.JPG.output	12.7 KB	20 Dec 2015	Anonymous Poster