

Exiv2 - Bug #1135

Read Makernotes

12 Nov 2015 19:18 - Schnitzel Foo

Status:	Closed	Start date:	12 Nov 2015
Priority:	Normal	Due date:	
Assignee:	Alan Pater	% Done:	100%
Category:	not-a-bug	Estimated time:	4.00 hours
Target version:	0.26		
Description			
Hello			
I'm baffled. By googling, I found a few places which seem to imply that exiv2 can read (and write?) makernotes, but I can't figure out how to do that. Does exiv2 support reading makernotes? If so, how?			
This is the image whose makernotes I'm trying to read:			
http://www.imaging-resource.com/PRODS/pentax-645z/YIMGP2303.DNG.HTM			
And yes, I know how to do it with exiftool.			
Kind regards			
Related issues:			
Related to Exiv2 - Bug #1136: exiv2 -ps (default) output does not respect the...		Closed	13 Nov 2015
Related to Exiv2 - Bug #965: Pentax K-3 MakerNote not recognized due to diffe...		Closed	20 Jun 2014 05 Nov 2014

History

#1 - 12 Nov 2015 19:29 - Alan Pater

Try

```
exiv2 -g Pentax YIMGP2303.DNG
```

#2 - 12 Nov 2015 19:37 - Robin Mills

- Category set to not-a-bug
- Status changed from New to Closed
- Assignee set to Alan Pater
- Target version set to 0.26

exiv2 can read maker notes. I don't believe exiv2 can rewrite maker notes. We have reversed engineered the data in many of the makernotes. We have documented this, and our sources of information about makernotes here: <http://www.exiv2.org/makernote.html>

#3 - 12 Nov 2015 21:01 - Schnitzel Foo

```
exiv2 -g Pentax YIMGP2303.DNG
```

That outputs nothing. I also tried PENTAX. Does it work on your end?
I'm using exiv2-0.24-[r1](#) (Gentoo)

#4 - 12 Nov 2015 21:42 - Robin Mills

Mr Foo

I am very not comfortable about the tone of your voice. That file seems to be working fine. As the saying goes "What's your beef, buddy?".

```
960 rmills@rmillsmbp:~/temp $ exiv2 -pa ~/Downloads/YIMGP2303.DNG
Exif.Image.NewSubfileType      Long      1  Thumbnail/Preview image
Exif.Image.ImageWidth          Long      1  160
Exif.Image.ImageLength         Long      1  120
Exif.Image.BitsPerSample       Short     3  8 8 8
Exif.Image.Compression         Short     1  Uncompressed
Exif.Image.PhotometricInterpretation Short     1  RGB
Exif.Image.Make                 Ascii     30 RICOH IMAGING COMPANY, LTD.
Exif.Image.Model               Ascii     20 PENTAX 645Z
Exif.Image.StripOffsets        Long      1  153696
```

Exif.Image.Orientation	Short	1	top, left
Exif.Image.SamplesPerPixel	Short	1	3
Exif.Image.RowsPerStrip	Long	1	120
Exif.Image.StripByteCounts	Long	1	57600
Exif.Image.XResolution	Rational	1	300
Exif.Image.YResolution	Rational	1	300
Exif.Image.PlanarConfiguration	Short	1	1
Exif.Image.ResolutionUnit	Short	1	inch
Exif.Image.Software	Ascii	30	PENTAX 645Z Ver. 1.00
Exif.Image.DateTime	Ascii	20	2014:08:29 01:55:20
Exif.Image.Artist	Ascii	1	
Exif.Image.SubIFDs	Long	2	152554 152960
Exif.SubImage1.NewSubfileType	Long	1	Primary image
Exif.SubImage1.ImageWidth	Long	1	8384
Exif.SubImage1.ImageLength	Long	1	6208
Exif.SubImage1.BitsPerSample	Short	1	14
Exif.SubImage1.Compression	Short	1	JPEG
Exif.SubImage1.PhotometricInterpretation	Short	1	Color Filter Array
Exif.SubImage1.StripOffsets	Long	1	211296
Exif.SubImage1.SamplesPerPixel	Short	1	1
Exif.SubImage1.RowsPerStrip	Long	1	6208
Exif.SubImage1.StripByteCounts	Long	1	83045975
Exif.SubImage1.XResolution	Rational	1	300
Exif.SubImage1.YResolution	Rational	1	300
Exif.SubImage1.PlanarConfiguration	Short	1	1
Exif.SubImage1.ResolutionUnit	Short	1	inch
Exif.SubImage1.CFARRepeatPatternDim	Short	2	2 2
Exif.SubImage1.CFAPattern	Byte	4	0 1 1 2
Exif.SubImage1.CFALayout	Short	1	Rectangular (or square) layout
Exif.SubImage1.BlackLevelRepeatDim	Short	2	2 2
Exif.SubImage1.BlackLevel	Long	4	41 16 68 71
Exif.SubImage1.WhiteLevel	Long	1	15590
Exif.SubImage1.DefaultScale	Rational	2	1/1 1/1
Exif.SubImage1.DefaultCropOrigin	Long	2	6 4
Exif.SubImage1.DefaultCropSize	Long	2	8256 6192
Exif.SubImage1.BayerGreenSplit	Long	1	0
Exif.SubImage1.AntiAliasStrength	Rational	1	1/1
Exif.SubImage1.ActiveArea	Long	4	4 52 6204 8320
Exif.SubImage2.NewSubfileType	Long	1	Thumbnail/Preview image
Exif.SubImage2.ImageWidth	Long	1	8256
Exif.SubImage2.ImageLength	Long	1	6192
Exif.SubImage2.BitsPerSample	Short	3	8 8 8
Exif.SubImage2.Compression	Short	1	JPEG
Exif.SubImage2.PhotometricInterpretation	Short	1	YCbCr
Exif.SubImage2.StripOffsets	Long	1	83257280
Exif.SubImage2.SamplesPerPixel	Short	1	3
Exif.SubImage2.RowsPerStrip	Long	1	6192
Exif.SubImage2.StripByteCounts	Long	1	6600261
Exif.SubImage2.XResolution	Rational	1	300
Exif.SubImage2.YResolution	Rational	1	300
Exif.SubImage2.PlanarConfiguration	Short	1	1
Exif.SubImage2.ResolutionUnit	Short	1	inch
Exif.SubImage2.WhitePoint	Rational	2	313/1000 329/1000
Exif.SubImage2.PrimaryChromaticities	Rational	6	64/100 33/100 30/100 60/100 15/100 6/100
Exif.SubImage2.YCbCrCoefficients	Rational	3	299/1000 587/1000 114/1000
Exif.SubImage2.YCbCrSubSampling	Short	2	2 1
Exif.SubImage2.YCbCrPositioning	Short	1	Co-sited
Exif.SubImage2.PreviewColorSpace	Long	1	2
Exif.Image.Copyright	Ascii	1	
Exif.Image.ExifTag	Long	1	153318
Exif.Photo.ExposureTime	Rational	1	1/200 s
Exif.Photo.FNumber	Rational	1	F8
Exif.Photo.ExposureProgram	Short	1	Not defined
Exif.Photo.ISOSpeedRatings	Short	1	65535
Exif.Photo.SensitivityType	Short	1	1
Exif.Photo.StandardOutputSensitivity	Long	1	204800
Exif.Photo.DateTimeOriginal	Ascii	20	2014:08:29 01:55:20
Exif.Photo.DateTimeDigitized	Ascii	20	2014:08:29 01:55:20
Exif.Photo.ExposureBiasValue	SRational	1	+7/10 EV
Exif.Photo.MeteringMode	Short	1	Multi-segment
Exif.Photo.Flash	Short	1	No, compulsory
Exif.Photo.FocalLength	Rational	1	120.0 mm
Exif.Photo.SensingMethod	Short	1	One-chip color area
Exif.Photo.CustomRendered	Short	1	Normal process
Exif.Photo.ExposureMode	Short	1	Auto bracket

Exif.Photo.WhiteBalance	Short	1	Auto
Exif.Photo.FocalLengthIn35mmFilm	Short	1	94.0 mm
Exif.Photo.SceneCaptureType	Short	1	Standard
Exif.Photo.Contrast	Short	1	Normal
Exif.Photo.Saturation	Short	1	Normal
Exif.Photo.Sharpness	Short	1	Normal
Exif.Photo.SubjectDistanceRange	Short	1	Distant view
Exif.Image.GPSTag	Long	1	153660
Exif.GPSInfo.GPSVersionID	Byte	4	2.3.0.0
Exif.Image.DNGVersion	Byte	4	1 2 0 0
Exif.Image.DNGBackwardVersion	Byte	4	1 2 0 0
Exif.Image.UniqueCameraModel	Ascii	12	PENTAX 645Z
Exif.Image.ColorMatrix1	SRational	9	77099/65536 -39421/65536 -5153/65536 -22070/65536 64783/65536 26706/65536 -1438/65536 3185/65536 49984/65536
Exif.Image.ColorMatrix2	SRational	9	64417/65536 -20313/65536 -8328/65536 -24149/65536 79517/65536 11278/65536 -6996/65536 12954/65536 44921/65536
Exif.Image.AnalogBalance	Rational	3	256/256 256/256 256/256
Exif.Image.AsShotNeutral	Rational	3	256/424 256/256 256/563
Exif.Image.BaselineExposure	SRational	1	-37474/65536
Exif.Image.BaselineNoise	Rational	1	1/1
Exif.Image.BaselineSharpness	Rational	1	1/1
Exif.Image.LinearResponseLimit	Rational	1	1/1
Exif.Image.DNGPrivateData	Byte	151552	(Binary value suppressed)
Exif.MakerNote.Offset	Long	1	926
Exif.MakerNote.ByteOrder	Ascii	3	II
Exif.PentaxDng.Version	Byte	4	11.2.1.0
Exif.PentaxDng.Mode	Short	1	Auto
Exif.PentaxDng.PreviewResolution	Short	2	720x480
Exif.PentaxDng.PreviewLength	Long	1	51062
Exif.PentaxDng.PreviewOffset	Long	1	75746
Exif.PentaxDng.ModelID	Long	1	645Z
Exif.PentaxDng.Date	Undefined	4	2014:08:29
Exif.PentaxDng.Time	Undefined	3	01:55:20
Exif.PentaxDng.Quality	Short	1	RAW
Exif.PentaxDng.Flash	Short	2	Off, Did not fire
Exif.PentaxDng.Focus	Short	1	AF-S
Exif.PentaxDng.AFPoint	Short	2	Auto
Exif.PentaxDng.AFPointInFocus	Long	1	(128)
Exif.PentaxDng.ExposureTime	Long	1	5 ms
Exif.PentaxDng.FNumber	Short	1	F8
Exif.PentaxDng.ISO	Short	1	204800
Exif.PentaxDng.ExposureCompensation	SShort	1	0.7 EV
Exif.PentaxDng.MeteringMode	Short	1	Multi Segment
Exif.PentaxDng.AutoBracketing	Short	2	8.2e+03 EV (No extended bracketing)
Exif.PentaxDng.WhiteBalance	Short	1	Auto
Exif.PentaxDng.FocalLength	Long	1	120.0 mm
Exif.PentaxDng.Saturation	Short	1	Normal
Exif.PentaxDng.Contrast	Short	1	Normal
Exif.PentaxDng.Sharpness	Short	1	Normal
Exif.PentaxDng.DSPFirmwareVersion	Undefined	4	254 255 255 253
Exif.PentaxDng.EffectiveLV	Short	1	3328
Exif.PentaxDng.PictureMode	Byte	3	MTF Program
Exif.PentaxDng.DriveMode	Byte	4	Self-timer (12 sec)
Exif.PentaxDng.ColorSpace	Short	1	sRGB
Exif.PentaxDng.PreviewImageBorders	Byte	4	0 0 40 40
Exif.PentaxDng.LensType	Byte	4	smc PENTAX-FA 645 Macro 120mm F4
Exif.PentaxDng.Temperature	SByte	1	19 C
Exif.PentaxDng.AELock	Short	1	Off
Exif.PentaxDng.NoiseReduction	Short	1	Off
Exif.PentaxDng.FlashExposureCompensation	SByte	2	0 EV
Exif.PentaxDng.ImageTone	Short	1	Portrait
Exif.PentaxDng.ColorTemperature	Short	1	0
Exif.PentaxDng.ShutterCount	Undefined	4	249 22 235 79
Exif.PentaxDng.DynamicRangeExpansion	Undefined	4	Unknown (0x00020000)
Exif.PentaxDng.HighISONoiseReduction	Byte	2	(255 4)
Exif.PentaxDng.AFAdjustment	SShort	1	0
Exif.PentaxDng.BlackPoint	Short	4	41 16 68 71
Exif.PentaxDng.WhitePoint	Short	4	13568 8192 8192 18016
Exif.PentaxDng.ShotInfo	Undefined	33	2 3 0 0 1 6 0 0 64 0 120 2 2 121 103 32 64 2 17 0 1 12 0 5 5 3 0 0 0 0 0 0 0
Exif.PentaxDng.AEInfo	Undefined	48	0 0 128 4 150 0 0 0 0 0 0 0 0 0 0 0 0 130 115 120 64 251 0 64 0 0 2 0 3 100 99 148 164 1 12 38 50 46 1 9 1 0 0 0 0 0 0 0
Exif.PentaxDng.LensInfo	Undefined	128	0 139 160 90 0 7 3 192 0 0 0 0 0 0 0 0 0 31 180 43 5 6 0 116 5 79 131 193 138 120 164 129 63 5 255 255 255 7 3 116 4 111 0 186 9 116 4 109 0 27 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 207 160 2 96 7 235 234 0 4 255 64 60 250 2 3 138 236 104 132 8 146 68 170 98 146 131 128 3 58 8

```
0 112 17 206 231 15 180 182 164 144 71 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Exif.PentaxDng.FlashInfo             Undefined   36  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 15 63 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1
Exif.PentaxDng.AEMeteringSegments   Undefined  4050 (Binary value suppressed)
Exif.PentaxDng.FlashADump            Undefined  1350 (Binary value suppressed)
Exif.PentaxDng.FlashBDump            Undefined  1350 (Binary value suppressed)
Exif.PentaxDng.CameraInfo            Long        5   77840 20140609 2 1 1000619
Exif.PentaxDng.BatteryInfo           Undefined   20   242 80 2 178 2 155 0 0 0 0 0 0 0 0 0 0 0 0 77 0
Exif.PentaxDng.AFInfo                Undefined  1024 (Binary value suppressed)
Exif.PentaxDng.ColorInfo              Undefined   18   123 32 120 31 137 31 140 32 180 32 122 32 131 31 1
41 31 0 0
Exif.PentaxDng.SerialNumber           Ascii       20   4948501
Exif.Image.CalibrationIlluminant1     Short        1    17
Exif.Image.CalibrationIlluminant2     Short        1    21
Exif.Image.PreviewColorSpace          Long         1     2
961 rmills@rmillsmbp:~/temp $
```

This matter is closed.

#5 - 13 Nov 2015 01:01 - Andreas Huggel

Exiv2 can update any metadata tag that it reads (with some deliberate exceptions), including Makernote tags. All tags are updated the same way, so once you understand how to update a regular (Exif) tag, you can do the same thing with any makernote tag. In the example (see the output that Robin posted), the `Exif.PentaxDng.*` tags are the makernote tags. Try something like `exiv2 -M'set Exif.PentaxDng.SerialNumber ABCDEF'` to set a tag and see the *Command line utility* section on the [Getting Started](#) page on the website to learn more.

PS: Maybe a DNG image is not the best example for an image with a makernote, I suggest you use a JPEG image to experiment.

PPS: A question like this is better asked in the [forum](#). If you file it as a bug, like you did, we expect you found an issue with the software; something that is not working as designed, as opposed to something you have not figured out yet.

#6 - 13 Nov 2015 09:33 - Schnitzel Foo

"I am very not comfortable about the tone of your voice. That file seems to be working fine. As the saying goes "What's your beef, buddy?". I beg your pardon? I came here either politely asking for clarification or reporting a bug, whichever it turns out to be, and I get the above response...

Andreas: thank you. I am quite familiar with using exiv2 already and have been doing so for years. The file I posted a link to returns no makernotes when run through exiv2 on my end, ergo I asked whether it works on "your" end. I downloaded it twice, so it's unlikely to be a corrupt download. That is why I opened an issue here - in case it turns out to be a bug, which it apparently has. But as none of the people who responded here could reproduce the problem, I presume it has already been fixed in whichever version of exiv2 you're all using - which version is that? I'm on what Gentoo calls the latest stable, 0.24-[r1](#). The [r1](#) means it has the following two patches applied: <https://dpaste.de/Mp5T>

MD5: 6472e19996d12fc2215a5b44f1ef68b2 YIMGP2303.DNG

#7 - 13 Nov 2015 10:17 - Robin Mills

It didn't feel polite to me. Quite the opposite.

I'm using the current trunk (svn [r4015](#) or so). I'm not aware of any recent change in exiv2 which would affect the output. I'll build the current release (v0.25) later and look at your file. I'll be a little surprised if the output is different.

#8 - 13 Nov 2015 11:00 - Alan Pater

Schnitzel Foo wrote:

I'm on what Gentoo calls the latest stable, 0.24-[r1](#).

exiv2 0.25 has had a ton of updates and bug fixes, including a lot of additional makernote support.

It has been packaged for Gentoo: <https://packages.gentoo.org/packages/media-gfx/exiv2>

#9 - 13 Nov 2015 11:58 - Schnitzel Foo

That must be it then. Let's leave this issue closed, and I'll update it in the unlikely event that I can reproduce it in 0.25. Thank you.

#10 - 13 Nov 2015 15:27 - Robin Mills

Mr Foo:

I'm owe you an apology. There are two things which are not right here.

1. exiv2 does not appear to list the makernotes in a DNG in v0.24
2. the option -g (--grep) is not used by the default exiv2 output (-ps = Print Summary). -g is applied to -pa and other outputs.

I don't recall modifying the DNG code in the last few years. However clearly something about MakerNote/DNG was changed for v0.25.

exiv2 -pa -g Pentax produces 55 lines of output extracted from the makernotes on v0.25 and later:

```
.../trunk $ sudo make install > /dev/null; exiv2 -vV | grep -e exiv2 -e svn ; exiv2 -pa ~/Downloads/YIMGP2303.DNG | grep Pentax | wc
exiv2 0.25 001900 (64 bit build)
exiv2=0.25.0
svn=4014
executable=/usr/local/bin/exiv2
library=/usr/local/lib/libexiv2.14.dylib
   55   547   4592   <-----
.../trunk $ cd ../0.25
.../0.25 $ sudo make install > /dev/null; exiv2 -vV | grep -e exiv2 -e svn ; exiv2 -pa ~/Downloads/YIMGP2303.DNG | grep Pentax | wc
exiv2 0.25 001900 (64 bit build)
exiv2=0.25.0
svn=0
executable=/usr/local/bin/exiv2
library=/usr/local/lib/libexiv2.14.dylib
/Users/rmills/Downloads/YIMGP2303.DNG: (No XMP data found in the file)
   55   547   4592   <-----
.../0.25 $ cd ../0.24
.../0.24 $ sudo make install > /dev/null; exiv2 -vV | grep -e exiv2 -e svn ; exiv2 -pa ~/Downloads/YIMGP2303.DNG | grep Pentax | wc
exiv2 0.24 001800 (64 bit build)
exiv2=0.24.0
executable=/usr/local/bin/exiv2
library=/usr/local/lib/libexiv2.13.dylib
   0     0     0     <-----
.../0.24 $
```

I have been aware for a few weeks the -g does not work with -ps. I'm not sure if that's really a bug. It is after all intended to be a summary. I investigated this a few weeks ago and thought "this is more trouble to fix than it's worth". I'm going to log an issue about it. However I think I'll document this in the man page and leave the code alone.

And just for grins, you can see there's a lot less output for your file with v0.24.

```
.../trunk $ exiv2 -pa ~/Downloads/YIMGP2303.DNG | wc
   165   1072   12410
.../trunk $ cd ../0.24
.../0.24 $ sudo make install >/dev/null
.../0.24 $ exiv2 -pa ~/Downloads/YIMGP2303.DNG | wc
   108    517    7691
.../0.24 $
```

v0.24 is almost 3 years ago. Time to move forward.

#11 - 14 Nov 2015 01:46 - Andreas Huggel

Correct recognition of makernotes for this camera model was added with issue [#965](#) in v0.25. The sample image makes for a good regression test to check if these makernote tags can also be written, thanks. I'll check that in a moment.

#12 - 15 Nov 2015 09:50 - Schnitzel Foo

https://bugs.gentoo.org/show_bug.cgi?id=565826

#13 - 06 Dec 2015 21:14 - Robin Mills

- % Done changed from 0 to 100

- Estimated time set to 4.00 h