akTIFF_Documentation

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Chapter 1

akTIFF_Documentation

1.1 akTIFF : Documentation

akTIFF.datatype V44.122

- SHAREWARE -

A PerSuaSiVe SoftWorX PRODUCT.

Needs Kickstart V3.x

Release Date : 21.08.2001

Please consider registration - usually less than 1% of the
users of a program do register. That's not much.

<Commercial> BTW: What is SViewIV ? </Commercial>

_ //
Only \X/ Amiga makes it possible!

Please visit:

WWW Support Site
http://www.ar-kleinert.de (AWeb-II)

The CHAOS theory:

"Like finding that bloody butterfly whose flapping
wings cause all these storms we've been having lately
and getting it to stop." (see "Witches Abroad" by Terry Pratchett)

Ahm...well:

...and thanks for all the fish.

1.2 copyright

The right of using this program is granted to you by paying the
SHAREWARE-fee of 15 DEM (10 U$) or equivalent (e.g. in Euro) to the author.

This software is based in part on the TIFF reference library (libtiff),
which allows being used e.g. for freely distributable and commercial programs.

libtiff 3.4beta037:

Note, that reading of lzw-compressed TIFF graphics is disabled because
of legal reasons. JPEG compression intentionally is not supported
for reasons of efficiency (seldomly used, but takes much space!)

Prefs GUI design improved by Georg Rottlaender <Georg.Rottlaender@bonn.netsurf.de>
under use of a 'NewIcon' graphics by Philip Vedovatti <vedovatt@u.washington.edu>
- included with kind permission by the 'Team NewIcons'

The patch files were created using the scompare SAS Binary File
Compare Program V6.50 which is copyright © 1992-1993 SAS Institute,
Inc. The spatch SAS Binary File Patcher V6.50 is copyright © 1992
SAS Institute, Inc.

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valid in conjunction with the law of certain countries this does not
affect the validity of the other clauses.

1.3 disclaimer

The author takes no responsibility for any results of the use of this
program.
This software is provided "AS IS" and there is no warranty of any kind,
so that you use this software at your own risk.

The author reserves the right to discontinue development of the program.

1.4 distribution

The akTIFF.datatype in this version is freely distributable (SHAREWARE).
You may copy it, if the copyright notice is left intact and
all of its parts are included in the distribution.

This program may only be included in commercial packages or commercial
program collections with my written permission - ask for it.

This program may be put on public domain disks or included in public
domain disk libraries - when being distributed that way, it is allowed
to take a nominal fee including the costs for copying, without considering
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This program may also be distributed via electronic mail and may be
put into mailboxes as long as the redistribution conditions are
respected in all points.

By using or distributing this program you automatically agree to
all of the above conditions and terms.

1.5 payment

```
You may send cash money in an envelope, euro-cheques, or just
transfer the 15 DEM (10 U$) shareware fee to the following account
(mention your name): Deutsche Bank Siegen, BLZ 46070024 Kto. 0298174

SWIFT code for Deutsche Bank Siegen, BLZ 46070024 is DEUTDEDK460.

No foreign cheques, please (euro-cheques or DM-cheques are ok).
```

1.6 Usage and so on

```
 Installation and Usage
 ----------------------
 Just install the datatype files to their appropriate directories,
 and copy the akTIFFPrefs command to SYS:Prefs/Datatypes (optionally).

 While the datatype itself can be placed elsewhere within a valid
 search path, the .ppc module HAS TO be placed to SYS:Classes/Datatypes/
 - not a problem, if you use the installer script, otherwise please
 remember...

 Program information
 -------------------
 akTIFF.datatype is a TIFF datatype, which is based on the
 latest TIFF reference sources (libtiff 3.5.2).

 So it does support 8 Bit color mapped files (colorspace expanded to
 8 bit per component always) and True color files (24 Bit, alpha
 channel ignored, cut down to 24 Bit 8:8:8 if necessary).

 Note, that reading of LZW compressed TIFF graphics is disabled because
 of legal reasons.

 With V39-V42 picture.datatype it either produces (upto) 256 color
 palette-based or HAM6/8 output (256 colors exported unmodified,
 24 Bit data either dithered or converted to HAM6/HAM8) with
 picture.datatype V43-45 as well 24 Bit may be exported unmodified.

 akJFIF makes use of memory pools where applicable and also
 automatically utilizes asyncio.library (V39+) when available.

 You must use the included preferences program for best configuration
 - of course you can also use one of the alternative prefs programs
 from Aminet, which should deliver the same functionality (but please
 remember not to send any corresponding bug reports to my address).

 akTIFF.datatype is SHAREWARE, the future depends on YOU.
```

1.7 Datatype FAQ

OS 3.5/3.9 problems

Programs, that let picture.datatype V44 do on-screen dithering, will face the "problem", that 24 bit images even will be dithered when being displayed on 15/16 bit screens. According to the OS 3.5 developer team, this should result in "better image quality".

However, when analyzing this statement, one will discover, that most graphic cards based on PC-chips only allow for 6 bit color lookup tables (LUTs) (that is, 6 bit for each out of red, green and blue - thus only a range of 0..63 instead of 0..255) which in fact isn't much better than the 5:5:5 or 5:6:5 ratio of 15/16 bit high color modes. However, 16 bit high color allows for 65536 distinct colors on screen, while a 6 bit LUT only will allow for 256 out of 262144 colors.

However, these new V44 dithering options can be changed via the datatypes preferences - global default settings then locally will be overridden.

"Object is not of required type"

Note, that reading of LZW compressed TIFF graphics is disabled because of legal reasons. JPEG compression intentionally is not supported, because it is seldomly used and support would bloaten the binaries a lot - subject to further considerations, though.

Data from the CMY/CMYK color space is not supported since these encodings are system-specific to the used desktop-publishing machines - no proper (always valid) mathematic translation is possible.

"Not enough memory"

The main reason why this datatype has been created was to supply a PPC-optimized TIFF datatype. 68k support has been added for completeness (and as fallback option), however it uses the same base construction as the PPC version and thus uses much more memory than necessary - however this may speed up loading somewhat, even in the 68k version (compared to other TIFF datatypes).

This datatype isn't suitable for 2 or 4 MB machines - you should have some fastram in spare - otherwise, use some of the competing TIFF datatypes.

Keyfile system

There's a keyfile system used for this datatype - note, that the keyfile actually does not enable any "extra functionality".

The unregistered version calls DisplayBeep() 3 times and delays 1/5s each time.

I won't send any keyfiles via snail mail. If you want to receive the key, please mention your email address (clearly written) with your registration !

NOTE: keyfile can be placed to either S: or where KEYPATH (env-variable) does point to.

PPC module (ELF)

Yes, this datatype is prepared for a great speed up with phase5's powerUP (TM) boards.

For this, the ELF TIFF decoder module has to be placed at location SYS:Classes/Datatypes/akTIFF.ppc - the installer script will manage this for you on demand.

Make sure that you've the 68040/060 versions of the datatype installed, since the 68000/030 versions don't contain the necessary extra code (there are no powerUP boards with 68000/030s CPU available or planned as far as I know). Also, don't install the ELF module and/or ppc.library if you don't have a PPC board plugged in.

Raw loading speed up should be very impressive with this PPC module, although it of course can't increase rendering or dithering (remapping) speed of other system modules or the calling program.

HAM conversion or ordered dithering (for 24 bit images, i.e. if not in V43 mode) are NOT yet PPC optimized - get a graphics card !

Please note, that the datatype (68k AND PPC) only will become fully functional for registered users of this datatype, who have a keyfile installed.

If you don't have a keyfile installed, you have two choices:

1. remove it again
2. make use of the 68k or PPC module but get only every 3rd line of the image (the whole image will be loaded and decoded, but only every 3rd line will be passed to the caller)

No write support ?

Sorry, there won't be write support (DTM_WRITE method), since I think, that datatypes are mainly a system for data exchange and not to do the job of existing conversion utilities.

To explain it even further:

The datatype mechanism certainly is a system to HIDE implementation and data format details. If one does offer too much choices for destination file formats, this would - in my opinion - completely be against this concept. The ideal way of keeping the datatypes' concept cleanly OOP would be to internally handle everything in an amiga-unique IFF format - which BTW is quite essential for clipboard data exchange as well. Unfortunately IFF-ILBM isn't very suitable for color depths greater than 8 bit. Maybe IFF-RGFX could be a good choice, here.

Ramlib Crashes

If you get "ramlib" gurus with this or any other program, then try installing Aminet:util/sys/StackAid.lha

```
Unknown datatypes (V43-45)
--------------------------
  If your datatypes stop working (unknown file format), please don't
  blame me, but at first check, whether you've still installed an already
  expired beta version of picture.datatype V43...

  And make sure, that you don't use picdtpatch (v39.2) from the
  Hypertext.datatype archive by Stefan Ruppert.

  Note, that certain TIFF compression types (e.g. LZW) are not supported.
  This may look as if the TIFF image were not recognized.
```

1.8 correspondence

```
** General PerSuaSiVe SoftWorX WWW Support Site is http://www.ar-kleinert.de **
 ____________________________________________________________
|      You may reach me the following way.                   |
|    Send bug-reports, money or whatever to:                 |
|------------------------------------------------------------|
|        * SuperView Development & Registration *            |
|          * DRAFU Development & Registration *              |
|       * Image Engineer Registration Site Europe *          |
|                                                            |
|                                                            |
|                  PerSuaSiVe SoftWorX                       |
|                                                            |
|                  Andreas R. Kleinert                       |
|                  Rabenflugstr. 1                           |
|                  D-57074 Siegen                            |
|                  Germany, Europe                           |
|                                                            |
|                  +49-271-22869                             |
|                  (also FAX + AM)                           |
|                                                            |
|                  Weekdays after 18.00h.                    |
|                                                            |
|         When calling via phone you may leave a message,    |
|         if I'm not available - but don't expect me         |
|         calling back to USA, Australia, ... since          |
|         german phone rates are HIGHLY expensive.           |
|____________________________________________________________|

EMail:

      Please ask before sending binaries!
      And please think twice before asking - my postbox
      is not unlimited in size.

         - Usenet
            >>>   info@ar-kleinert.de
                  Andreas_Kleinert@gmx.de
                  Andreas_Kleinert@t-online.de
```

1.9 thanks

Thanks go to (in order of appearance ;-)
==========

- Robert C. Reiswig
- Philippe Devilard
- Bradley Rogers
- Sebastian Becker
- Beth Hedrick
- Peter Denomy
- Leonardo Petrucelli
- Colin Keefe
- Paul Kieffer
- Thomas Lorenz
- Keith Schyler
- Howard Toliver
- Dan Muldin
- Martin Ruston
- Johnny Nielsen
- Larry Urquhart
- Steve Hodson
- Christian Schröpfer
- Gert Hubers
- Peter Kaltstein
- Telemar Rosenberger
- Matthew Sawyer
- John Hart
- Frank Böhne
- Patrice Dumont
- Dominique Harelle
- Jürgen Ofner
- Sascha Ploss
- James Harrison
- Adam Suwala
- Simon J Glover
- Matteo Consolati
- Svein Inge Wik
- Bjarke Vangsgaard
- Michael Thompson
- Rolf Kleiber
- Scott Konowal
- Arno Richter
- Manfred Kern
- Andreas Ohlsson
- Craig Peterson
- Mathias Roslund
- Jennifer Symancyk
- Bruno Caruso
- Arsi Koutaniemi
- Janifer Lopez
- Ian Armstrong
- Klaus-Dieter Klang
- Georg Rottländer
- Rune Jensen
- Hal Samuelson
- Rich Robinson
- Casper Thygesen
- Thomas Karlsen
- Thomas Körner
- Roger Curtis
- Yves Liebercier
- Chris Barrow
- Janko Köhler
- Jon Mines
- Mahieux Pascal
- William Eaves
- Kapryan Kennedy
- Philip Yearbury
- Johan Rönnblom
- Michael Fedrowitz
- Jürgen Seubert
- Peter Theuring
- Phillip Degnan
- Simo Koivukoski
- Ian Tyrell
- Petr Voralek
- Manfred Kern
- Arnljot Arntsen
- Geoff Tovey
- Michael Domoney
- Mark Shaw
- Winfried Krueger
- Don Cox
- Jürgen Wilschke
- Philippe Reux
- Stefan Fischer
- Alfred Kendall
- G. Burdett
- Steinar Pedersen
- Richard Lane
- Christian Sauer
- Mark Vallins
- Gontier Laurent
- John de Boni
- David Hibbert
- Wolfgang Bauer
- Arthur Moyer
- Ian Argaet
- Philip Vedovatti
- Stefan Michel
- Sjord de Vries
- Jürgen Urbanek
- Antonio Brianese
- Adam Corrano
- Kai Foelster
- Luca Baldelli
- Dominique Deangili
- Sam Gillies
- Alan Guillevic
- Ed Eden
- Andrew Mills
- Magnus Bouvin
- James Luscombe
- Cameron Snyder
- Peter Annuss
- Neil Bowes
- Harald Schulz
- Denis Zwornarz
- Frank Müller
- Kirk Strauser
- Chris Dallimore
- Jeffrey Grzanich
- Pekka Sippola
- Antoine Bordier
- Francis Klein
- Havard Lunde
- Herve Sonneville
- Carl Read
- Frank Wille
- Harald Wünsche
- Henrik Jensen
- Stephen Webber
- Paul Venton
- Roberto Muller
- John Orwin
- Daniel Stripes
- Dario Soccoli
- Antonio Maria Sebastiani
- Rasmus Bothe
- Paul Compton
- Simon Jones
- Maria Pelova
- Gerard Cornu
- Michael R. Wilson
- James Miller
- Mats-Olov Rustad
- Daniel Plant
- Markus Schmidt

Thanks also must go to:

```
 - ...all buyers of the SView Productivity Suite from Schatztruhe
 - ...the Cloanto team, namely Michael C. Battilana
 - ...the people from phase5, namely Ralph Schmidt and Claus Herrmann
 - ...the picture datatype V43 programmers, namely Frank Mariak and Olaf Barthel
 - ...the other programmers of datatypes, for information exchange
      and useful comments
 - ...dozens of people I forgot to mention here !
```

1.10 prefs

```
akTIFFPrefs
-----------
akTIFFPrefs is the Preferences Program for akTIFF.datatype.

GUI has been designed with StormWizard 2.0, so this program needs
"wizard.library" V37+ (you can find a copy on Aminet under
"biz/haage/WizardLibrary.lha" or even never versions under
ftp.haage-partner.com).

Icon by Bert Bosma <lmb@wxs.nl> (based on NewIcons).

An alternative MUI prefs program replacement by Alvaro Thompson
(originally) and Achim Stegemann (later) is now available as
util/dtype/akMUIPrefs.lha - there also are various other replacements.


The global settings will be written to ENV: (and maybe also ENVARC:)
into a preferences file called "Datatypes/akTIFF.prefs".

Task (process) specific settings also can be done - either using
the preferences program (which allows to select the corresponding
process from a list as long as it actually is running at the same
time) or by hand, following the scheme below:

                         OPTIONAL
---------------- task specific settings files -----------------------
Settings specific to different caller programs may be created
by copying the global settings from "Datatypes/akTIFF.prefs" to an
optional task-related prefs file called

          "Datatypes/akTIFF.prefs_Tasks/TaSkNaMe"

where "TaSkNaMe" means the name of the program as e.g. shown by
a system monitor (for obvious reasons, this does work best with
workbench programs, which don't require name patterns as some
CLI programs might do, like for example "CLI(3):Work:Browsers/XWebber").
So, with AWeb for example, you would just edit your global settings
file and then do the following:

  MakeDir ENV:Datatypes/akTIFF.prefs_Tasks
  Copy ENV:Datatypes/akTIFF.prefs ENV:Datatypes/akTIFF.prefs_Tasks/AWebIP"

   [... and the same for ENVARC: ...]
```

```
  After that, AWeb will ignore the global settings and fetch its own
  from the given file.
  ---------------------------------------------------------------------

  You can do the following settings:

1)  V44_DITHER=(0..2)
2)  V43_MODE=(NO_DITHERING|V40_DITHERING)
3)  V40_24BIT_MODE=(DITHER_ORDERED|HAM_OUTPUT)
4)  V40_DEPTH=(3..8)
5)  HAM_MODE=(HAM6|HAM8)
6)  INTERLEAVED_BM8
7)  DISPLAYABLE_BM8
8)  CUSTOM_MODES
9)  PPC=(ON|OFF)
10) NOASPECT
11) DEBUG
12) LZW_ERROR


  That's mostly self-explaining, but as an example,
  here are the default settings and a short explanation:

V44_DITHER=1
V43_MODE=NO_DITHERING
V40_24BIT_MODE=DITHER_ORDERED
V40_DEPTH=8
HAM_MODE=HAM6
INTERLEAVED_BM8=ON
DISPLAYABLE_BM8=OFF


   General Explanation of Options
   ==============================

1) V43_MODE
------------
  NO_DITHERING:  does output 24 Bit data when running pic-dt V43
  V40_DITHERING: switches to V40 mode settings when running pic-dt V43

2) V40_24BIT_MODE (when running picture datatype V40 or V43 in V40 mode)
-----------------
  DITHER_ORDERED: does ordered dithering of 24 Bit data
  HAM_OUTPUT:     does convert 24 Bit data to HAM6/8

3) V40_DEPTH
------------
  When dithering to a palette (so: when in V40 mode and ordered dithering
  being selected) the number of palette colors, which is 256 by default,
  may be reduced here (e.g. on ECS systems).
  Valid depth values are 3..8 (which results in 16..256 colors, easily
  calculated by 2^depth).

4) HAM_MODE
-----------
  HAM6: generates HAM6 output for 24 Bit graphics, when running V39-42
  HAM8: generates HAM8 output for 24 Bit graphics, when running V39-42
```

```
    Note, that HAM8 is native to AGA machines and thus may cause
    difficulties with graphic boards and won't work with OCS/ECS Amigas.
    With HAM6 and graphic boards also problems may occur.

5) INTERLEAVED_BM8
------------------
  ON:  will output interleaved bitmaps upto 256 colors
  OFF: will output normal bitmaps (BMF_CLEAR and maybe BMF_DISPLAYABLE
       only) - you may switch interleaved mode off for specific programs,
       which cannot handle it, or when AllocBitmap() has been patched
       for chunky modes by a graphics card software or e.g. EGSPlus

6) DISPLAYABLE_BM8
------------------
  ON:  will output displayable bitmaps upto 256 colors
  OFF: will output normal bitmaps (BMF_CLEAR and maybe
       BMF_INTERLEAVED) - you may turn displayable mode on
       for specific programs, which want to use datatype generated
       bitmaps directly as screen bitmap. If they are enabled to
       do this, this may save some memory (for another bitmap).
       This is recommended for systems without graphics card
       and only few chip memory.

7) CUSTOM_MODES   (hidden option)
---------------------------------
  When the keyword CUSTOM_MODES is set,
  only viewmodes out of the standard set
  will be generated: - LowRes            ( 320x200/256)
                     - HighRes           ( 640x200/256)
                     - SuperHighRes      (1280x200/256)
                     - LowRes Lace       ( 320x400/512)
                     - HighRes Lace      ( 640x400/512)
                     - SuperHighRes Lace (1280x400/512)

  When CUSTOM_MODES=0x######## (e.g. CUSTOM_MODES=0x00000000)
  is set, the specified hexadecimal viewmode ID will be used always
  - alternatively, you can specify the viewmode name as plain text,
  for example "CUSTOM_MODES=PAL:HighRes". Note, that spelling is
  very critical here.

  For HAM output, this is only true, if the mode ID actually is
  capable of HAM (this usually is indicated by OR'ing it with HAM_KEY),
  otherwise a different ID will be computed.

8) NOASPECT       (hidden option)
---------------------------------
  If x/y aspect generation produces buggy results,
  e.g. with PictIcon, this option may be used to
  always force 1:1 to be returned.

9) DEBUG          (hidden option)
---------------------------------
  Will enable debugging output, i.e. open info requesters
  with concrete information about image size and compression.

  In 68k mode, there'll also be requesters when TIFF parsing/decoding
```

```
  errors do appear. In PPC mode these are silently discarded.

10) LZW_ERROR      (hidden option)
-----------------------------------
  LZW compression isn't supported, which usually will cause
  the datatype system to give an error message like
  "unknown object" or "not enough memory". If you'd explicitely
  (by requester) like to be informed when akTIFF does encounter
  a LZW-compressed image, just specify this option.

  If DEBUG is specified, LZW_ERROR will be overriden by a
  global information message for each image (not just a
  special one for LZW).
```

1.11 history

```
 Known Bugs: - some people reported problems with the installation
               scripts in the past. If you encounter any problems or
               bugs, please report these directly to the script author
               Robert C. Reiswig <akDatatype@vgr.com>

             - please use at least V41.101 of wizard.library.
               You should find a copy coming with demo versions
               of various programs under ftp.haage-partner.com

             - viewmode selection may not always be 'perfect'

             - file recognition is a possible weakpoint
               (this means, some non-TIFFs might be recognized as TIFFs)


 Keyfile problems:

  People, who did not receive their keyfile within 2-4 weeks after sending
  their registration should also contact me. (During sommer, please note,
  that it not always does make sense to call after 2 weeks - some people
  tend to make holiday sometimes...)


 History
 =======
 V44.122 (21.8.2001): - speedup (changed behaviour on unreg. version)

 V44.121 (21.8.2001): - Beschleunigung

 V44.120 (21.8.2001): - history cleaned up
                      - more compressions supported
```