1   Introduction

The picture format can also contain a preview image. All pixels are contained as uncompressed 32-bit color values. The file can be created with the program (PicturePaint). The format can be displayed in detail with the program (FileViewer). The file extension is called ".tdp" (Two Dimension Picture).

2   Value types

Type	Description	Area
INT8	8bit with sign	-128 to 127
INT16	16bit with sign	-32.768 to 32.767
INT32	32bit with sign	-2.147.483.648 to 2.147.483.647
INT64	64bit with sign	-9.223.372.036.854.775.808 to 9.223.372.036.854.775.807
BYTE	8bit unsigned	0 to 255
UINT16	16bit unsigned	0 to 65.535
UINT32	32bit unsigned	0 to 4.294.967.295
UINT64	64bit unsigned	0 to 18.446.744.073.709.551.615
CHAR	8bit character	0 to 255
WCHAR	16bit character	0 to 65.535
FLOAT	32bit floating point	± 1.5e-45 to ± 3.4e38
DOUBLE	64bit floating point	± 5.0e-324 to ± 1.7e308
MEMORY	Memory in bytes	

Table 2: Value types

3   Description

3.1   File format

Type	Name	Description	Info
UINT32	IDNumber	The file must have the ID number (0x49504454). ('TDPI')	3.2
BYTE	Version	The version for this file format is 1.	3.3
INT64	FileSize	Specifies the total file size in bytes.	3.4
INT32	ThumbnailSize	The size of the thumbnail in bytes. (ThumbnailSize >= 0)	3.5
MEMORY	ThumbnailImage	The memory is an image file. (PNG oder JPEG)	3.6
INT32	ImageWidth	The width of the image. (ImageWidth > 0)	3.7
INT32	ImageHeight	The height of the image. (ImageHeight > 0)	3.8
MEMORY	ImageColors	The memory contains pixels as 32bit colors. (ARGB)	3.9

Table 3.1: File format

3.2   Identification number

The identification number identifies the file format. ('TDPI': Two Dimension PicturePaint Image)

3.3   Version

The version number is always 1 for this description.

3.4   File size

The file size is given in order to be able to recognize a mistake.

3.5   Thumbnail size

The thumbnail size can be 0 if no preview image is included. The size is expressed in bytes. It can not be negative. A thumbnail is useful if the pages of the original image are larger than 1000 pixels.

3.6   Thumbnail

The thumbnail should have a PNG format for a transparent or detailed original image. Other image formats such as JPEG, TIFF or BMP are also possible. The default is PNG format. The thumbnail should not contain more than 250,000 pixels. The page lengths should not exceed 500 pixels.

3.7   Image width

The image width must be greater than 0. The width is specified in pixels.

3.8   Image height

The image height must be greater than 0. The height is expressed in pixels.
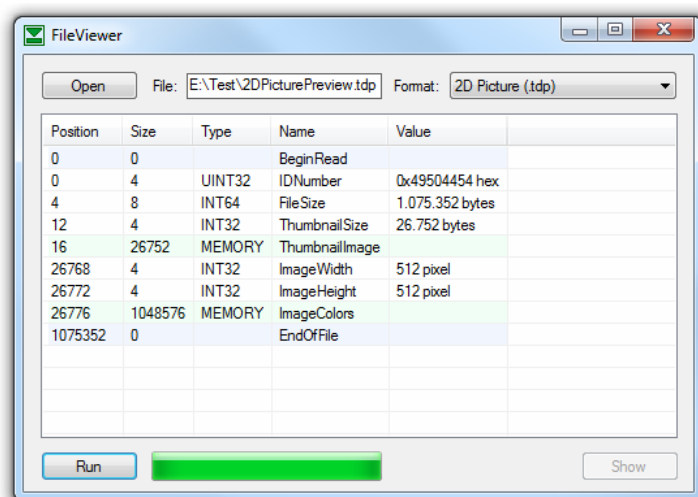
3.9   Image memory

All image points are contained in the image memory. A pixel is a 32bit value in the ARGB color format. The ARGB stands for the color components: alpha, red, green, blue. The size of the image memory in bytes is calculated from the width times the height times the color size.

Memory size: ImageSize = ImageWidth * ImageHeight * 4Bytes

4   Program for reading the file format

On the PanotiSoft website, there is a test program under technical documents, with which the file format can be read out in a structured manner. In addition, the program code can also be downloaded. The program was written under Visual Studio 2008 with the programming language C#.

Position	Size	Type	Name	Value
0	0		BeginRead	
0	4	UINT32	IDNumber	0x49504454 hex
4	8	INT64	FileSize	1.075.352 bytes
12	4	INT32	ThumbnailSize	26.752 bytes
16	26752	MEMORY	ThumbnailImage	
26768	4	INT32	ImageWidth	512 pixel
26772	4	INT32	ImageHeight	512 pixel
26776	1048576	MEMORY	ImageColors	
1075352	0		EndOfFile	

Program: FileViewerX64.zip
                    FileViewerX32.zip

Project file: FileViewerCode.zip

Description: FileViewer.pdf

FileViewerCode:

Format file: FileViewerFormat.cs
Format class: FileViewerTDPicture