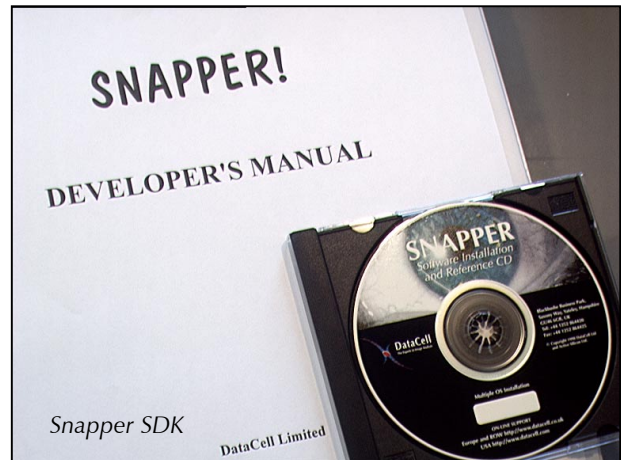## SNAPPER SOFTWARE DEVELOPER'S KIT (SDK)

- Allows rapid system development and integration using Snapper hardware.
- Comprehensive library functions and documentation for all Snappers and Bus Interface Boards.
- Comprehensive application examples with full source code.
- Libraries supplied as dynamic link libraries (DLLs/.so) for all operating systems apart from static libraries for MS-DOS.
- Royalty free (provided it is used in conjunction with Snapper hardware).
- SDKs are available for the following operating systems: Windows NT, Windows 95, Windows 98, Windows 3.1x, MS-DOS (protected mode), MacOS, Solaris 2, LynxOS and VxWorks.
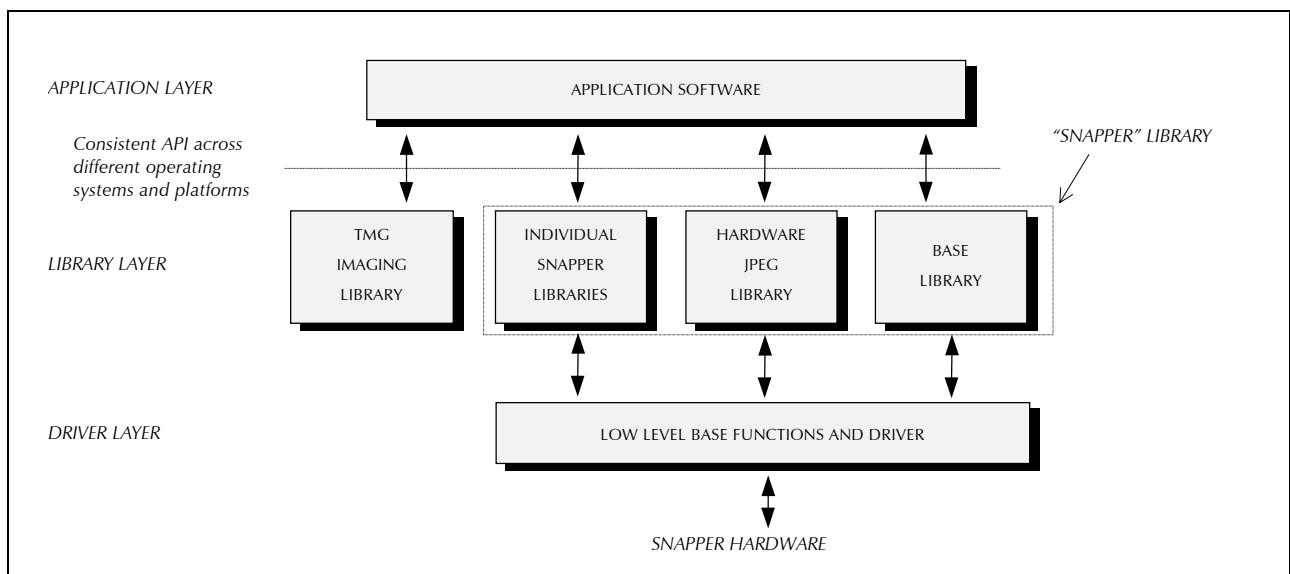

Snapper SDK

OVERVIEW

The **Snapper SDK** is designed for OEMs and integrators using Snapper hardware. It contains comprehensive example applications and optimised libraries for a variety of operating systems (listed above). The API (application programming interface) is consistent across operating systems and hardware platforms allowing easy migration between for example, Windows 3.1x to Windows 95/98/NT, or perhaps from the ISA Bus Interface Board to the PCI Bus Interface Board.

The **Snapper SDK** (pictured above) contains detailed manual pages on all the Snapper functions as well as sections on installation, a developer's guide, error handling, JPEG ("Crunch") compression, a glossary and technical notes. Also included is a general purpose imaging library - the "TMG" library, which again runs on all of the above operating systems. This imaging library contains many general purpose imaging functions for the loading, saving, displaying and pixel format conversion of images. A key feature of the display functionality is that the API is virtually independent of the programming environment (e.g. Windows NT, X Windows etc).

The libraries for the 32 bit operating systems (i.e. all except Windows 3.1x) are written in native 32 bit code optimised to the environment in which they will be used. MS-DOS static libraries are provided for 32 bit protected mode DOS (using Watcom's 32 bit compiler).

The price of the SDK includes 90 days hotline support. Further maintenance and support is available at a nominal yearly charge, which includes software upgrades and updated manual information.

Snapper Software Structure

SNAPPER SDK INFORMATION

Supported Operating Systems and Platforms:

OS	OS Level	Platform	Compiler
Windows NT:	v4.0 or above	x86	Microsoft Visual C++ (v4.0 or above).
Windows 95:	-	x86	Microsoft Visual C++ (v4.0 or above).
Windows 98:	-	x86	Microsoft Visual C++ (v4.0 or above).
Windows 3.1x:	-	x86	Microsoft Visual C++ (v1.0 , 1.5, 1.51), Microsoft Visual Basic (v3.0 or above).
MS-DOS:	-	x86	Watcom C++ (v10.5 or above) using Watcom's 32 bit flat model and Flashtek's X-32VM DOS extender.
MacOS	System 7.5 and above, or System 8 and above	Any PCI Mac	Metrowerks CodeWarrior Professional 3.
Solaris 2:	Solaris 2.6 or above.	Sparc (SBus & PCI)	SunSoft's SPARCompiler C (v2.0 or above) and GNU C (v2.5 or above).
LynxOS:	LynxOS 2.5 LynxOS Cetia Uni/RT 2.4	X86, PowerPC 603 and above	GCC v2
VxWorks:	Tornado 1.0.1	PowerPC 603 and above.	Tornado 1.0.1

NOTE:

1. The above compilers are fully supported and the example applications are all written with these compilers. Code generated on alternative compilers for the above operating systems will also work with the supplied libraries for that operating system.

2. Solaris 2.3 is also available but does not include the latest library features and should NOT be used for new projects.

SDK Contents:

- Comprehensive application examples with full source code: Windows NT/95/98/3.1x are all written using the Microsoft MFC application framework.
- Libraries for Windows NT/95/98/3.1x are provided as DLLs (dynamic link libraries). The libraries for Solaris 2 are provided as ".so" (shared object) libraries. Device drivers are provided for each operating system (capable of full DMA as appropriate) which provide the interface between the libraries and the hardware. All Snapper libraries are optimised for the operating system. In other words native 32 bit code is used for 32 bit operating systems.
- TMG imaging library - A general purpose imaging library, which includes software JPEG compression and decompression - again optimised to the operating system. Example source code for custom TMG functions is also included.
- ActiveX SDK for Windows NT/95/98 developers. The SnapperTool application is provided, not only as an example of an ActiveX program, but also as a simple image acquisition tool.
- Comprehensive Developer's Manual.
- 90 days telephone support and software upgrades.

Support:

Support is provided by telephone, fax, e-mail and web site. Yearly support contracts may be purchased which provide telephone support, access to the web-site/FTP site and typically several upgrades per year.

TMG Imaging Library:

The Snapper SDK is supplied with a general purpose image library referred to as the TMG library. This library provides general purpose imaging functions such as file loading, saving, pixel format conversion etc, as well as JPEG software compression and decompression and display functions. The display API is simple to use and virtually identical across all

operating systems. (Under MS-DOS, the Flash Graphics library from Flashtek is also required - Snapper part number DOS-FG-LIB.) Other functions include chroma keying, colourmap/palette generation and LUT operations.

32 Bit DOS Extenders:

The X-32VM DOS extender is a pre-requisite when using the Watcom compiler (Snapper part number DOS-X32-LIB). This allows Flash Graphics compatibility and PCI DMA support.

EXAMPLE APPLICATIONS

This example is a complete program that shows how an image is acquired from a Snapper module (***Snapper-24*** in this example), displayed, then saved as a TIFF file. (This code is written for MS-DOS, but it is identical for all other operating systems, apart from some additional *TMG_display* calls that may be required).

```
#include <asl_inc.h>

int main(ui16 argc, char** argv)
{
    Thandle hBase, hSnapper;          /* handle to baseboard and Snapper */
    Thandle hSrcImage, hRGB24Image;   /* handle to images  */
    Thandle hDisplay;                 /* handle to display */

    /* Initialize the Bus Interface Board, Snapper and Display */
    hBase = ASL_get_ret(BASE_create(BASE_AUTO));
    hSnapper = BASE_get_parameter(hBase, BASE_MODULE_HANDLE);
    hSrcImage = TMG_image_create();
    hRGB24Image = TMG_image_create();
    hDisplay = TMG_display_init(hDisplay, TMG_800x600x24);  /* 800 by 600, 24 bit */

    /* Initialize the Snapper in its default RGBX32 bit acquisition mode */
    SNP24_initialize(hSnapper, SNP24_CCIR_DEFAULT);
    SNP24_set_image(hSnapper, hSrcImage);     /* set image parameters */

    /* Capture an image, display it and write it to a TIFF file */
    SNP24_capture(hSnapper, SNP24_START_AND_WAIT);
    SNP24_read_video_data(hSnapper, hSrcImage, TMG_RUN);
    TMG_display_image(hDisplay, hSrcImage, TMG_RUN);

    /* Convert from pixel format RGBX32 to RGB24 */
    TMG_image_convert(hSrcImage, hRGB24Image, TMG_RGB24, 0, TMG_RUN);
    TMG_image_set_outfilename(hRGB24Image, "rgb24.tif");
    TMG_image_write(hRGB24Image, TMG_NULL, TMG_TIFF, TMG_RUN);

    /* Free memory and exit */
    BASE_destroy(BASE_ALL_HANDLES);
    TMG_image_destroy(TMG_ALL_HANDLES);
}
```

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
SNP-SDK	Snapper Software Development Kit. This includes a printed copy of the manual and a CD containing support for Windows 95/98/NT, ActiveX, MS-Dos, MacOS and Solaris 2. The CD contains on-line documentation, driver files, library executables (DLLs or SOs), all header files, as well as all the source code for the examples from the SNP-APPS-CD detailed below.
SNP-SDK-RT	Snapper Software Development Kit for Real Time Operating Systems. This includes a printed copy of the manual and a CD containing support for LynxOS and VxWorks as well as Windows 95/98/NT, ActiveX, MS-Dos, MacOS and Solaris 2. The CD contains on-line documentation, driver files, library executables (DLLs or SOs), all header files, as well as all the source code for the examples from the SNP-APPS-CD detailed below.
SNP-SDK-MAN	Snapper Software Development Kit printed manual only, as detailed above.
SNP-SDK(-RT)-CD	Snapper Software Development Kit CD only, as detailed above.
SNP-SDK(-RT)-SUP	12 month support and upgrade contract for SDK.
SNP-APPS-CD	Snapper Application Examples. This consists of pre-compiled examples on a CD.
DOS-FG-LIB	Flashtek's "Flash Graphics" library is required in addition to the SNP-SDK for imaging applications under MS-DOS. This library is royalty free and works with the Watcom compiler and the X-32VM DOS extender.
DOS-X32-LIB	Flashtek's X-32VM 32 bit DOS extender. This is pre-requisite for use with the Watcom compiler (it allows Flash Graphics and PCI DMA support).
SNP-IG	Snapper Installation Guide. This is included in the SDK manual, but is available as a separate item free of charge.
TMG-LIB-SW-LIC	Software licence to use the TMG library (including its JPEG compression / decompression software and display software) without Snapper hardware. The use of the TMG library is free of charge as long as it is used in conjunction with Snapper hardware. If it is used independently (for example - software only JPEG decompression and display) then a licence must be purchased.

ORDERING NOTES

- Further operating systems will be supported as PCI becomes available on other platforms - for example DEC Alpha workstations and PowerPC based systems.
- Please contact Active Silicon for latest information on other Snappers, Bus Interface Boards, and supported operating systems.

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