

Protecting Games **CRYPTO-BOX®** and DarkBASIC



Described Version: DarkBASIC 1.13
Also applicable for: DarkBASIC 1.x and up
Target platforms: Windows Vista/XP/2000,
MARX hardware: CRYPTO-BOX USB



Quick and efficient hardware based software protection!

MARX provides DarkBASIC developers with a robust and reliable way to integrate protection to their software and intellectual property. With the CRYPTO-BOX USB state-of-the-art hardware system, the SmarxOS API, and further MARX solutions and technologies, DarkBASIC applications will be protected against piracy and unauthorized usage in the most efficient way.

The CRYPTO-BOX:

- On-board encryption of data with Rijndael algorithm
- Encrypted EEPROM with 4 kByte of on-board memory (up to 72 kByte available on request)
- Reliable communication and CRYPTO-BOX identification
- and many more.



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1. Developing games with DarkBASIC: brief overview

DarkBASIC allows software developers you to create your own games, demos, slideshows, even business applications using the easy to understand BASIC programming language. Powerful command set gives control over Microsoft Direct X game engine to ordinary PC users without special programming skills and makes game development easy and rapid. Anyone with a PC can make 3D objects move around the screen interacting with other game objects and taking live responses from the game player's inputs.

All games created with DarkBASIC are license and royalty free and can be distributed as a stand alone executables. DarkBASIC key features include support for 10 2D image formats, 7 music file formats, 3D Studio and Direct X Object, full object rotation control, object limbs control, landscapes creation, sprite, scaling, and collision, 3D fog depth, distance and color control, automatic camera orientation, 3D sound, CD audio tracks and video animations playing, and many others. DarkBASIC proposes over 750 game oriented commands and built-in 3D primitives as well as impressive collections of professionally produced fully animated 3D models, textures, images, sound effects, voices, and other resources.

2. Extending DarkBASIC environment with external APIs

DarkBASIC provides an easy support for external DLL calls in DarkBASIC Professional or DarkBASIC Enhancement Pack. "LOAD DLL" and "CALL DLL" commands allow calling and obtaining results from DLLs which can be embedded into application. Calling of external DLL functions can be done in just a few lines of code:

```
...  
load dll "cbios.dll",1  
call dll 1,"CBIOS_Startup"  
...
```

"CALL DLL" command directly supports integer, real, and string type parameters passing. Still more complex entities like custom structures can be easily passed as memory block pointers ("GET MEMBLOCK PTR" and other related commands).

3. Using CRYPTO-BOX USB with DarkBASIC projects

Only by protecting your software and/or data you, can guarantee that every single user has paid for your software and your intellectual property. MARX provides DarkBASIC developers with robust and reliable way to integrate protection to their software and intellectual property. With the CRYPTO-BOX state-of-the-art hardware system and based on it SmarxOS API, solutions and technologies offered by MARX you will be able to protect your DarkBASIC applications against piracy and unauthorized usage in the most efficient way.

Securing the digital world The CRYPTO-BOX® is ideal for

- Software Protection
- License Management
- Remote Updates
- Web Security
- Secure Online Identification
- Access Control (online business)
- Content Protection (DRM)

CRYPTO-BOX Evaluation Kit
www.cryptotech.com/eval
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CRYPTO-BOX Datasheet		
	CRYPTO-BOX 2	CRYPTO-BOX 2000
Controller chip	8/16 bit RISC Smart Card Processor Atmel AT90SC series with USB interface	8 Bit micro controller with USB interface
Chip certifications	EAL4+ / ISO 7816	WHQL (Microsoft)
Firmware	Proprietary MARX	Proprietary MARX
Supported operating systems	Windows Vista/XP/2000, Linux, MacOS X (in preparation)	Windows Vista/XP/2000, Linux, MacOS X
In hardware integrated algorithm	AES 128 bit, RSA up to 2048 bit key length, others (i.e. ECC) on request	AES 128 bit in hardware, RSA up to 2048 bit key length (on driver level)
Memory size	72Kbytes, minimum 32KBytes free	4, 32 or 64 KBytes
Reading / writing rate internal memory	Read: ca. 80Kbytes/s Write: ca. 30Kbytes/s	Read/write: ca. 1.3KBytes/s
Password (PIN/PUK)	Up to 16 bytes sequence	
Case & LED	Metal Designer Case, LED displays the operating mode, eye for key ring/lanyard	
Connector	USB Type A	
Memory programming	Typically more than 1 million cycles; 100 000 guaranteed	
Data durability	10 years	
Conformity & certifications	FCC, CE, RWTUEV, RoHS, USB Logo	
Dimensions	0.51" x 0.28" x 1.38" (13 x 7 x 35 mm)	0.51" x 0.32" x 1.38" (13 x 8 x 35 mm)
Weight	0.282 oz (8.0g)	0.326 oz (9.2g)
Temperature range	+32°F to +140°F (0°C to +60°C)	
Air humidity	0% to 95% relative humidity	

CRYPTO-BOX certifications



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