Preliminary description of the Bio SmartCard (BSC)

The BSC establishes an electric purse function which makes it ideally suitable for payments, or can be used in any application in which there is a need for personal verification.
The BSC in itself contains the necessary resources for the verification of the card-user by means of her/his biometric code stored on the memory of the BSC also in encrypted form. It can perform the verification of the user inside the BSC and only after doing it can communicate through its serial port with the other device's card R/W (e.g. a PC, or ATM). The data transmission is done in encrypted form. The BSC is connected to its card R/W through its ISO 7816 standard electrical connector.

Technical specification:

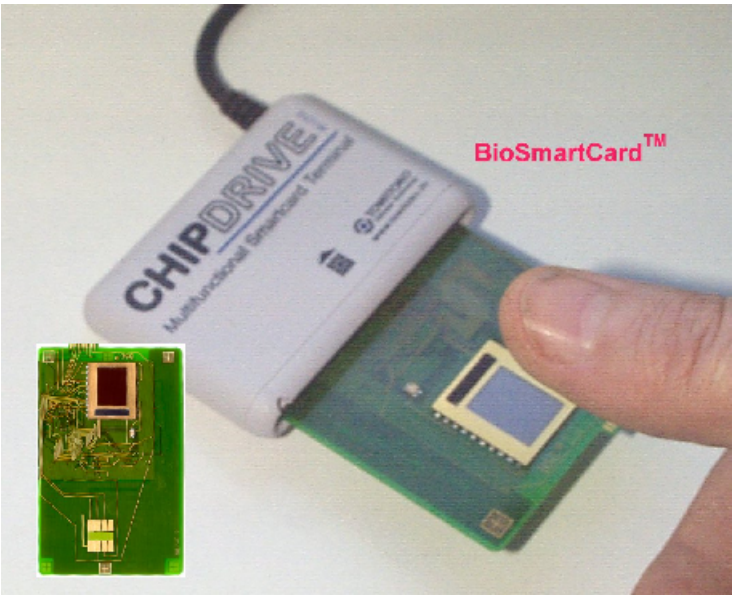
The used microprocessor:	**Hitachi SH2-DSP**
Clock frequency:	**100 MHz**
RAM:	**32 Mbytes**
Flash Memory:	**2 Mbytes**
Data encryption method:	**RSA (during the data transmission between the outer device's card R/W and the smart card)**
The image scanner:	**FingerTip™** module manufactured by the Infineon Tech. AG
Method of image capture:	capacitive, solid state (CMOS)
Active area of the scanner:	11,1 mm x 14,3 mm
Resolution:	224 x 288 pixels, 513 dpi, 8 bits/pixel grey-scale image
Usable grey levels:	**a**pproximately 80
Interface:	serial port
Life cycle:	100,000
Dimensions:	**ISO 7816** standard smart card' size (one, the outer part of the BSC is thicker than the standard size)

Operating temperature:	0 °C ÷ + 40 °C
Storage temperature:	– 40 °C ÷ + 80 °C
Verification algorithm:	minutiae-based
Allowable rotation:	±45°
FAR:	10^{-5} in quality level 4. (There 3 available fingerprint quality levels)
FRR:	$2\text{-}5x10^{-2}$
Power Supply:	3.3 V (through the card's ISO 7816 standard electrical connector)

Connection:
Card R/W connection: through the smart card interface (SCI) of the microprocessor

Card issuing, personalization and initialization :

This work can be done through using a different software running in the authorization center (CA) or in the department of the service-giving company in the presence of an authorized person who is responsible for doing this job. In this place the code of the user's fingerprint is determined and written on the BSC. In case of an electric purse function the amount of money can be loaded onto the card.



Development, Manufacturing and Trading Ltd.
Address: H-1115 Budapest, Csóka u. 7-13. Hungary
Phone/fax: +36-1-354-0720 /-0721