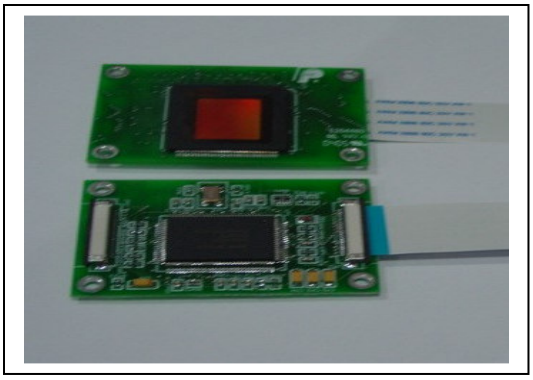
41 Kallang Pudding Road
#03-0, Golden Wheel Building
Singapore 349316
www.trilobytetech.com

MB8108 – MBF200

(Bio-Crypto Controller Module)



OVERVIEW

The MB8108 family is a complete bio-crypto module with built in Bio-Crypto controller SIB8108P (32-bit MCU with two 8k byte cache, one 512k byte flash memory, system SRAM) and Fujitsu MBF200 Capacitive Biometric sensor. The proven finger print extraction algorithm (winner of International Fingerprint Verification Competition 2000) and Public Key Infrastructure (PKI) function are included. It's ready to be used for system development or direct application

TECHNICAL FEATURES

- 2 FFC (30 pins) connectors for interfaces with external devices.
- Enrolment/ De-enrolment and Authentication can be performed through UART or wireless interface
- Once owner is enrolled, other users of the same device can only be enrolled with owner's approval.
- Provide more than 512K byte of flash memory for customized programming.
- Ownership is transferable if granted by current owner.
- No reading of the confidential area in flash memory is allowed.
- RSA key pair are generated internally, only public key is allowed to be read externally, private key is always resided in the silicon.
- Built-in AES algorithm for data encryption.
- Provide maximum security as the biometric matching is performed in the silicon.
- Provide a set of protocol through UART for external MCU to control the crypto function, biometric verification and I/O logic function.
- Sweep Optical sensor spec:
  - Size: 0.56X12.44mm active.
  - Acquisition rate >3700 fr/sec.
- Support external flash.
- Power management for maximizing battery life for mobile devices.
- Size 42mm X 42mm X 15mm

FUNCTIONS

The three basic functions:

- **Basic Stand Alone**: Capable to perform biometric control system (Read an finger print image from sensor, search and remove the related finger print data) and Read the finger print image and match with the stored template)
- **Internal MCU Emulation**: Allow to utilize the internal MCU emulation to interface with the external devices.
- **External MCU**: capable to interface with external MCU to communicate the finger print authentication result.

41 Kallang Pudding Road
#03-05 Golden Wheel Building
Singapore 349316
www. trilobytetech.com

INTERFACE CONFIGURATION

Primary Interface	Secondary Interface
Power supply	PWM
UART 1	UART 2
I2C Master	I2C Slave
SPI Master	GP I/O (16)
GP I/O (8)	UART 3

FINGER PRINT VERIFICATION SPECIFICATION

Finger print template size	360 byte / fingerprint template
Optimum finger print templates (1 to n)	50
Maximum finger print templates (index)	1000
False Acceptance rate (FAR)	< 1 in 10000
False Rejection rate (FRR)	< 1 in 1000
Verification time (100 templates)	< 1 sec

DC PARAMETERS

Parameter	Symbol	Pins	Conditions	Min	Typ	Max	Unit
IO Supply Voltage	V_{IO}	VDD_IO, VDD_NVM	Normal	3.0	3.3	3.6	V
Core Supply Voltage	V_{core}	VDD_CORE	Normal	2.25	2.5	2.75	V
Input High Level	V_{IH}			2.0			V
Input Low Level	V_{IL}					0.8	V
Output High Level	V_{OH}			2.4		V_{IO}	V
Output Low Level	V_{OL}			0		0.4	V
Clock Frequency	Fc	XIN_CLK, XOUT	V_{IO} = 3.0-3.6 V	10.0		20.0	MHz
*Normal operating current at 80MHz core clock	I_{core}				75	150	mA
*Sleep mode current	I_{core}				20		uA

Note : * *Preliminary reading at room temperature*
IO Current (Iio) depends on external connection, for minimal I_{IO} at sleep mode: all pull up pins must be at V_{IO} and all pull down pins must be at Vss

TRILOBYTE TECH PTE LTD
#41 Kallang Pudding Road #02-03 Golden Wheel Building
Singapore 349316 Tel:(65) 6744 9789 Fax: (65) 6741 3543
For sales information, please e-mail: sales@trilobytetech.com