

FC2055A1-FS11P/FS20

FIMODULE Product Sheet

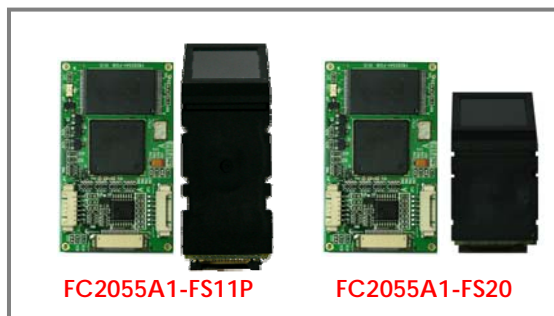


KEY FEATURES

- Embedded Stand-alone Fingerprint Identification Module (FIModule)
- Verification (One-To-One) and Identification (One-To-Many)
- Onboard Template & Record Data Storage
- Simple Serial RS-232C/CMOS Interface
- Downloading/Uploading Template from/to Host
- Easy to integrate giving minimal Time-To-Market

APPLICATION

- Fingerprint based access control systems & door-lock
- Fingerprint personal identification system
- Time attendance system using fingerprint
- Fingerprint based weapon control system
- Bank employee and customer identification system using fingerprint (Possibly combined with IC card)
- Fingerprint based machine control
- Fingerprint based car locks



DESCRIPTION

IZZIXFingerENGINE in FIModule follows the commonly accepted fingerprint identification scheme, which uses a set of specific fingerprint feature points (minutiae). However, it contains many powerful algorithmic solutions, which enhance the system performance and reliability. Some of them are listed below:

- Quality Check of Fingerprint Image
- Fully Tolerant to Fingerprint Distortion and Rotation(360°)
- Classification Feature by Global Feature Vector
- Efficient Feature Extraction
- Fingerprint Enroll Mode with Feature Collection
- Suitable Algorithm to 1:1 and 1:N Mode

And, FIModule acts as a biometric subsystem with template & record data storage. FIModule can be used to any fingerprint application and be controlled by a host sending/receiving command via the standard serial interface. FIModule makes fingerprint templates and stores directly in flash memory. Templates can also be exported for external memory.

QUICK SPECIFICATION

Response Time(sec)	1:1 Mode	Enrolled Fingerprints	Matching OK
	1:N Mode	500	0.8
		1,000	< 1.1
		2,000	< 1.6
FAR(False Acceptance Rate)	< 0.0001 %		< 2.4
FRR(False Rejection Rate)	< 0.1 %		
Matching Mode	Verification(1:1 Mode), Identification(1:N Mode)		
Times of Enrollment (E _T)	Feature Collection Mode, FCMode	3 times ⇒ 1 feature data/1 user	
	Feature Exclusive Mode, FEMode	n times(normally n = 5) ⇒ n feature data/1 user	
Memory Size	2Mbytes FlashROM		
Number of Fingerprint & Record	FCMode	2,000	40,000
	FEMode	400 (if E _T = 5)	
User Data Size	512 Bytes (= 480 Bytes Template Data + 32 Bytes Header Data)		
Record Data Size	16 Bytes		
Start-up Time / Reset Time (msec)	420 / 420(POWER ON State)		

Digital Signal Processor	TI TMS320VC5502					
Fingerprint Board	FB2055A1-OPT1					
Optical Fingerprint Sensor	FS11P/FS20, CMOS CIF Image Sensor					
Dimensions & Weight	FB2055A1-OPT1	51 × 30 × 8.5 mm	< 11 gr			
	FS11P	20.5 × 25 × 55 mm	< 40 gr			
	FS20	20.5 × 25 × 42 mm	< 32 gr			
Window Size	18.8 × 16 mm					
Resolution	500 DPI					
Operating Voltage	5VDC					
Power Consumption (5VDC)	Standby	95mA	Sensing	110mA	PowerDisable	< 7uA
	PowerDown1	70mA	PowerDown2	65mA	PowerDown3	30mA
Temperature/Humidity	0°C ~ 70°C / 15% ~ 80 %					
External Interface	7Pin Connector : RS232C Level UART					

This specification is subject to change without prior notice.

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DIGENT - Advanced Fingerprint Security Solution

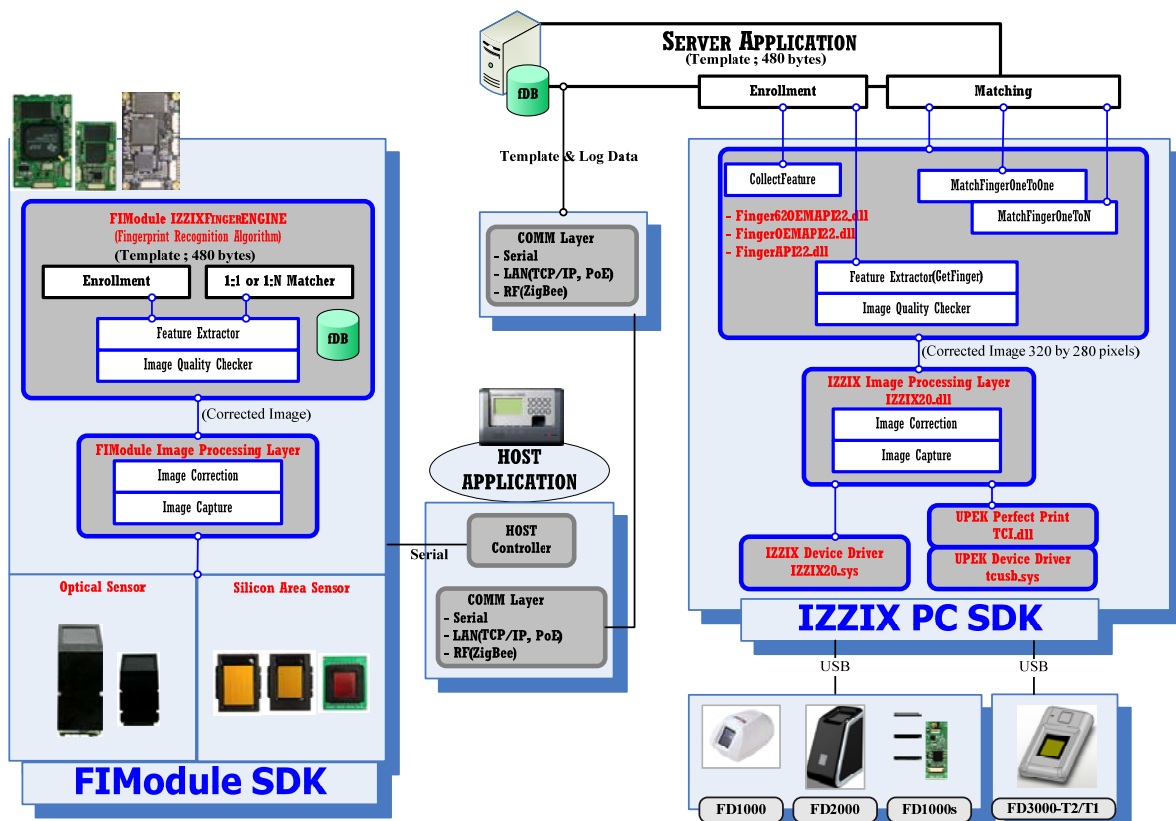
Rev. 4.5

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Refer to Manual for details and usage specification.

FC2055A1-FS11P/FS20

FIModule Product Sheet



Ordering Information

•FC2055A1 Module Series

FC2055A1 – x1 – x2 x3 x4 x5

FC20	Algorithm Version V20 series	
55A1	DSP TMS320VC5502(BGA)	
① x1	CMOS CIF Optical Image Sensor	FS11P/FS20
② x2	Communication Interface (Hardware)	R : RS232C
③ x3	Flash Memory Capacity (Number of Fingerprints)	M2 : 2M Byte (2000 Fingerprints)
④ x4	Supply Voltage	V50 : 5.0 Volt
⑤ x5	Total Length(TL) and Insulation Length(IL) of FFC Cable : TL(IL) L160 / L120 / L80 -> 160(150) / 120(110) / 80(70)mm	

FIModule	Fingerprint Board
FC2055A1 – FS11P – RM2V50L160(L120, L80)	FB2055A1 – OPT1
FC2055A1 – FS20 – RM2V50L160(L120, L80)	

•FC2055A1 SDK

FC20 SDK-E2 (55A1-FS11P/FS20)

