

Datasheet

GT-521F Series

*Optical Fingerprint Recognition **EMBEDDED** Module*

Version 1.6

Jun 5th, 2019

www.adh-tech.com.tw
sales@adh-tech.com.tw

Table of content

Table of content	3
1. General Description	4
2. Feature.....	5
3. Specification	6
4.Module Dimension.....	8
5.Pin Assignment	10
6.Power Sequence.....	10
7.Part Number.....	11

1. General Description

The GT-521F Series are high performance fingerprint module *with wake up on finger function* developed by ADH-Tech. It is one chip fingerprint module designed for integration into products with UART interface.

The active area allows stable imaging and ability to cope with mass-market applications in need of both security and convenience.

The reader within the MCU device is high performance, low power consumption 32-bit microcontrollers based around an ARM® Cortex™-M3 processor core and the fingerprint algorithm is processed on it.

2. Feature

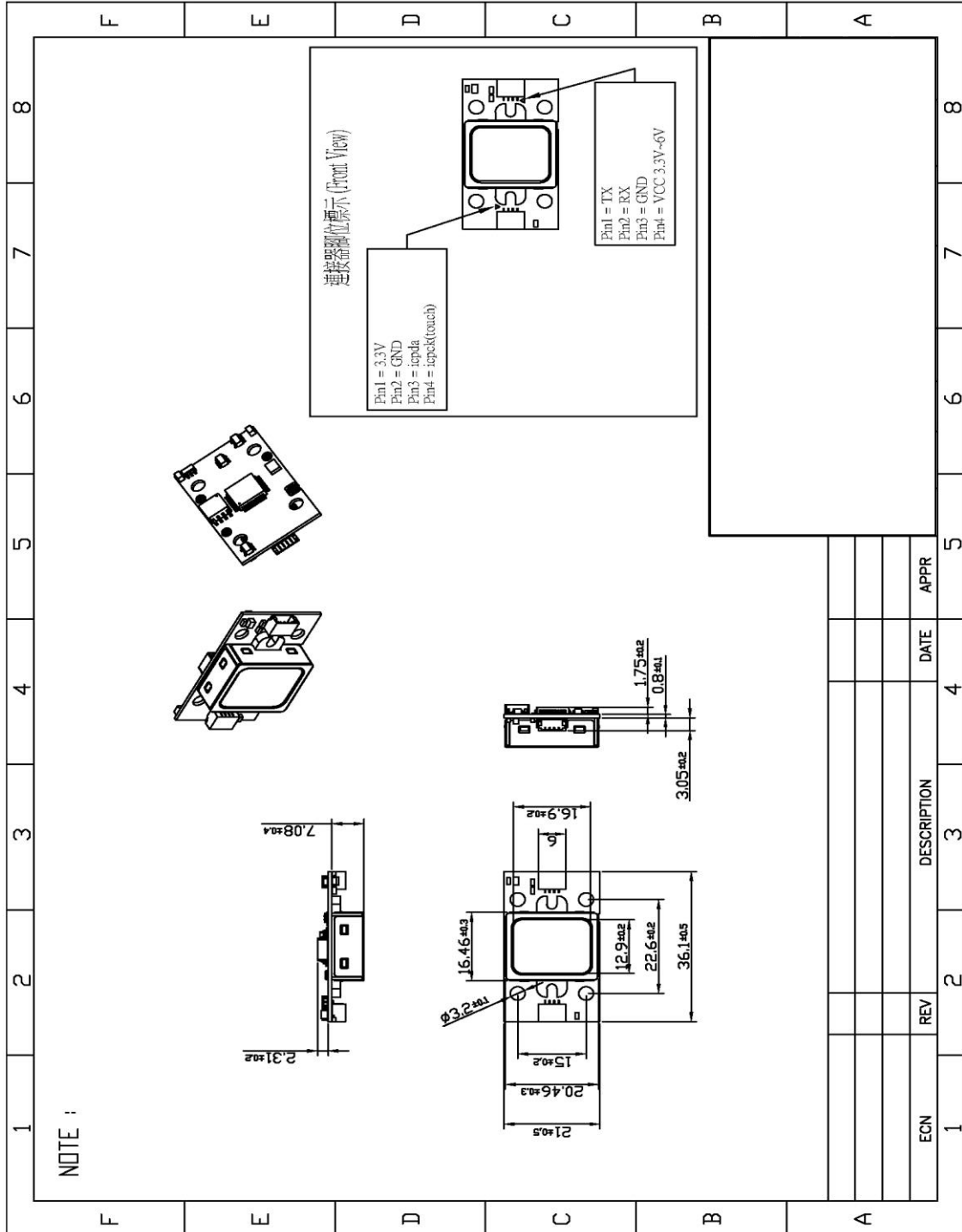
- **Simple UART communication protocol**
- **Ultra-thin Optical Sensor**
- **Resolution 450 DPI**
- **GT-521F52/GT-521F5 3000 fingerprints storage,
GT-521F32/GT-521F3 200 fingerprints storage**
- **Wake up on Finger Function**
- **Works well with dry, moist or rough fingerprints**
- **Anti-Scratch with surface high hardness $\geq 5H$**
- **1:1 verification, 1:N identification**
- **Reading & writing fingerprint template(s) from/to the device**
- **High-accuracy and high-speed fingerprint identification technology**
- **Downloading fingerprint image from the device**
- **Convenient & Safe & Facilitation—Just one touch and easy to enroll**

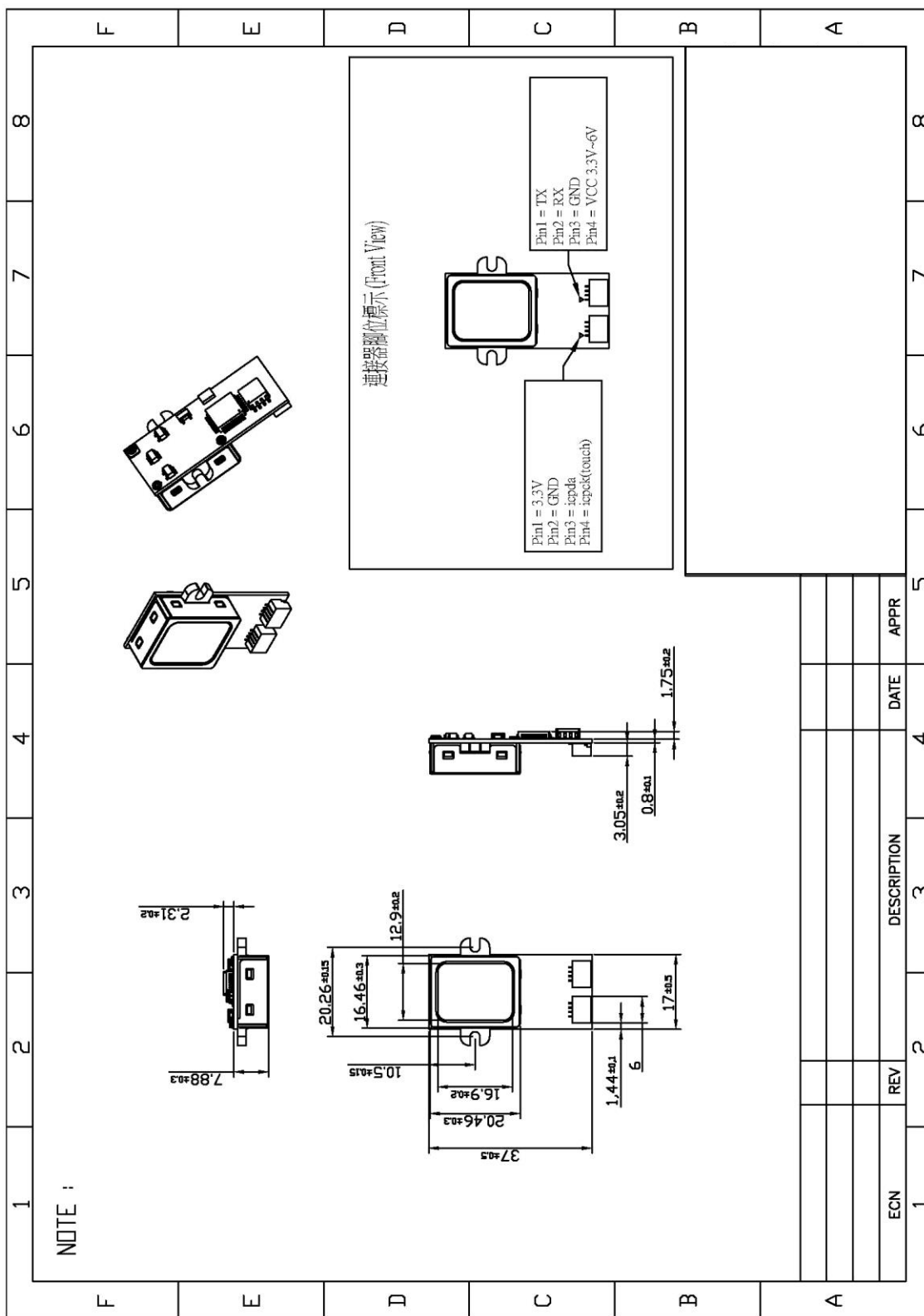
3. Specification

Item	GT-521F Series
CPU	ARM Cortex M3 Core MCU)
Sensor	Optical Sensor
Window (mm)	16.9 x 12.9
Effective area of the Sensor (mm)	14 x 12.5
Image Size	258 x 202 Pixels
Resolution	450 dpi
The maximum number of fingerprints	200/3000 fingerprints
Matching Mode	1 : 1 ; 1 : N
The size of template	496 Bytes (template) + 2 Bytes (checksum)
Communication Interface	UART, default baud rate = 9600bps after power on
False Acceptance Rate (FAR)	< 0.001%
False Rejection Rate(FRR)	< 0.1%
Enrollment Time	< 3 sec (3 fingerprints)
Identification Time	< 1.5 sec
Operating Voltage (V)	Power pin: 3.3V~6V, Tx/Rx pins:3.3V
Operating Current (mA)	< 130

Touch	Operating Voltage	DC 3.3 V
	Operating Current	< 3mA
	Standby Current	< 5uA
Touch Function		High Active

4. Module Dimension





5.Pin Assignment

Touch IC Connector		
No.	Name	Description
1	VDD	Power voltage that range is 3.3V
2	GND	Ground
3	ICPDA	Program mode : In-circuit programming data/address pin. Normal mode : Active Low. It could be waked-up function from touch IC to $V_{IL} = 0.66V$, $V_{IH} = 2.64V$
4	ICPCK	Program mode : In-circuit programming clock pin Normal mode : Active High. It could be waked-up function from touch IC to $V_{IL} = 0.66V$, $V_{IH} = 2.64V$

UART Connector(Baud rate 9600~115200bps)		
No.	Name	Description
1	TX	Transmitting serial data $V_{IL} = 0.8V$, $V_{IH} = 2V$
2	RX	Receiving serial data $V_{IL} = 0.8V$, $V_{IH} = 2V$
3	GND	Ground
4	VCC	Power voltage that range is from 3.3V~6V

6.Power Sequence

Power On: we need voltage of power pin from 0V to operating voltage within 15ms.

Power Off: we need voltage of power pin to 0V that it make sure module off.

7.Part Number

Port Number	The maximum number of fingerprints
GT-521F32	200
GT-521F52	3000
GT-521F3	200
GT-521F5	3000

	GT-521F32	GT-521F52	GT-521F3	GT-521F5
Dimension				
Mechanism	Horizontal		Vertical	
Durability	IP56			
LED light	White Light			
Fingerprint storage	200	3000	200	3000