

# 集智创芯科技

Gi Chip Technology

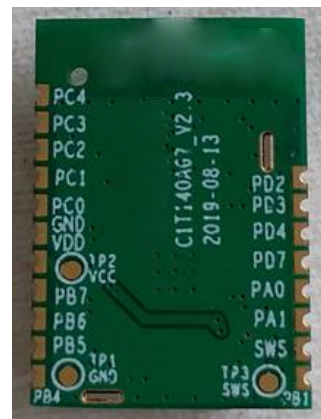
## JXBLE251F512ET32 Module Specification

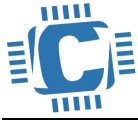
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### Keyword:

Features; Interfaces; Working modes; Electrical specifications; Reference design;

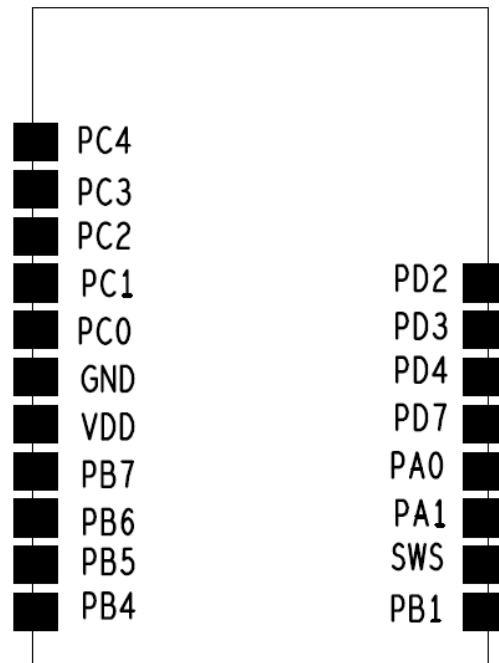




### 1.3 Target applications

- ✧ Smartphone and tablet accessories
- ✧ Remote Control and 3D glasses
- ✧ Sports and fitness tracking
- ✧ Wearable devices

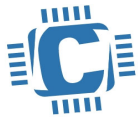
### 1.4 Pins definition



Bottom

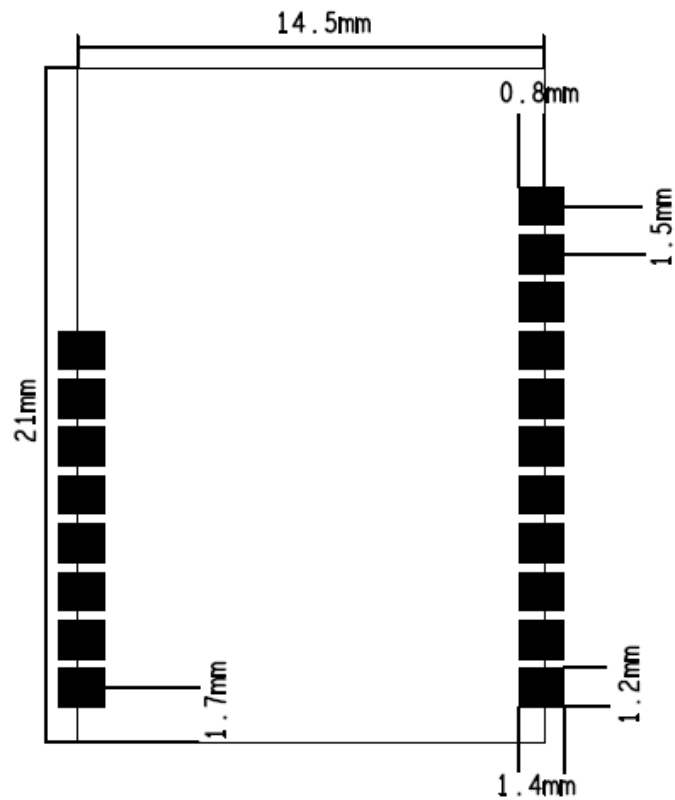
Figure 1-1 Module Pins Description

Pin name	Description	Reset
PC4	I/O	PWM2/PON/ADC
PC3	I/O	PWM1/I2C_SCK
PC2	I/O	PWM0/I2C_SDA
PC1	I/O	PWM1/I2C_SCK
PC0	I/O	PWM4/ I2C_SDA
GND	GND	-
VDD	PWR	-
PB7	I/O	SPI_DO/RX/ADC
PB6	I/O	SPI_DI/ADC



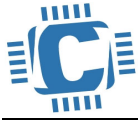
PB5	I/O	PWM5/ADC
PB4	I/O	PWM4/ADC
PD2	I/O	SPI_CN/PWM3
PD3	I/O	PWM1
PD4	I/O	SWM/ PWM2
PD7	I/O	SPI_CK
PA0	I/O	PWM0N
PA1	I/O	-
SWS	I/O	PA7
PB1	I/O	PWM4

### 1.5 Module pins size



Top

Figure 1-2 Module pins size



## 1.6 Available interfaces

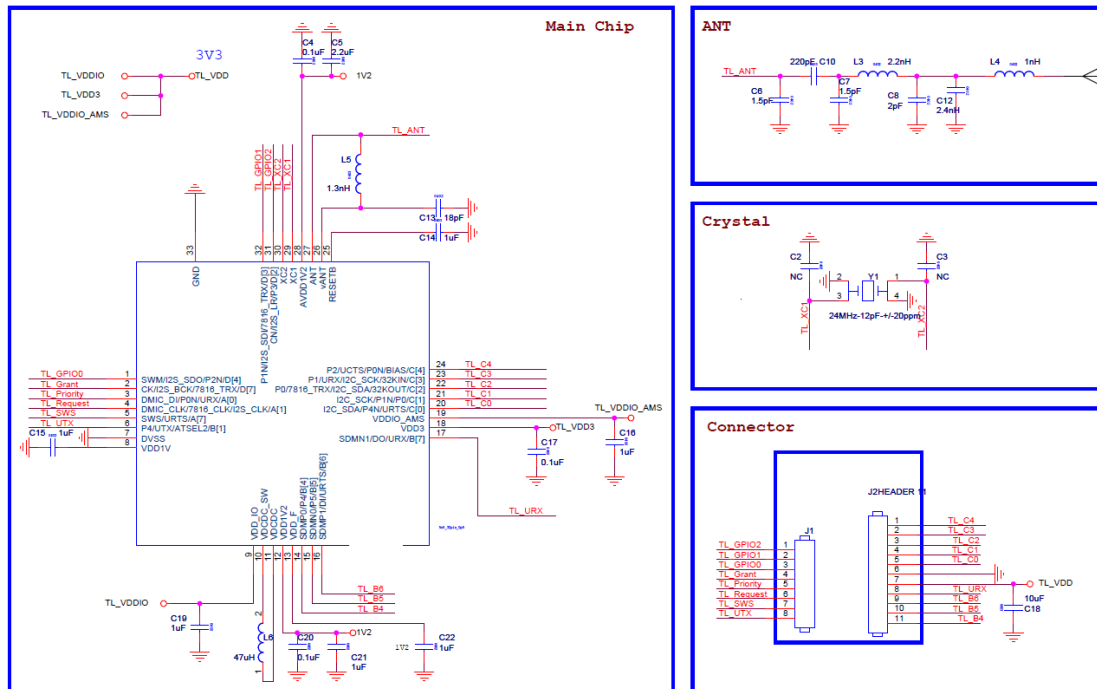


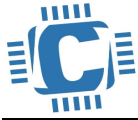
Figure 1-3 Module schematic

As shown in Figure 1-3, the available interfaces are shown as below:

- ✧ Up to 17 GPIOs: PA0~ PA1, PA7, PB1, PB4~PB7, PC0~PC4, PD2~PD4, PD7;
- ✧ I2C: SDA/SCK PC0/PC1, PC2/PC3;
- ✧ SPI: PB7/PB6/PD7/PD2 corresponding to DO/DI/CK/CN respectively
- ✧ Swire debug interface: SWM – PD4, SWS – PA7
- ✧ UART: TX – PB1, RX – PB7
- ✧ 6-channel PWM output: PWM0 – PC2, PWM0N – PA0/PC4, PWM1 – PC3, PWM1\_N – PC1/PD3, PWM2 –PC4, PWM2\_N – PD4, PWM3 – PD2, PWM4 – PB1/PB4, PWM4\_N – PC0, PWM5 – PB5
- ✧ 7-channel ADC input: PB1, PB4~PB7, PC4~PC5

## 1.7 Working modes

- ✧ Pass-through mode: communicate with Host MCU via UART interface
- ✧ Direct control mode: no external MCU needed



## 2 Key Electrical Specifications

### 2.1 Absolute maximum ratings

Table 2-1 Absolute Maximum Ratings

Characteristics	Sym.	Min.	Max	Unit	Test Condition
Supply Voltage	VDD	-0.3	3.6	V	All AVDD, DVDD and VDD_IO pin must have the same voltage
Voltage on Input Pin	V <sub>In</sub>	-0.3	VDD+0.3	V	
Output Voltage	V <sub>Out</sub>	0	VDD	V	
Storage temperature Range	T <sub>Str</sub>	-65	150	°C	
Soldering Temperature	T <sub>Sld</sub>		260	°C	

**CAUTION:** Stresses above those listed in “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

### 2.2 Recommended operating condition

Table 2-2 Recommended operation condition

Item	Sym.	Min	Typ.	Max	Unit	Condition
Power-supply voltage	VDD	1.8	3.3	3.6	V	All AVDD, DVDD and VDD_IO pin must have the same voltage
Supply rise time (from 1.6V to 1.8V)	t <sub>R</sub>			10	ms	
Operating Temperature Range	T <sub>Opr</sub>	-40		85	°C	ET version
		-40		125	°C	AT version



### 3 FCC Test Result

No.	Test Items				Test Result
<b>FCC (DUT FW: EMI binary file)</b>					
1	Tx Peak Power Output - field strength				Pass
	RF Channel	2.402GHz	2.440GHz	2.480GHz	
	dBm	11.5	11.32	11.5	
2	Tx Power Spectral Density				Pass
	RF Channel	2.402GHz	2.440GHz	2.480GHz	
	<a href="#">dBm@100kHz</a>	10.77	10.5	10.6	
	<a href="#">dBm@3kHz</a>	-4.46	-4.73	-4.63	
3	Tx Minimum 6dB Bandwidth				Pass
	RF Channel	2.402GHz	2.440GHz	2.480GHz	
	MHz	770	770	770	
4	Tx Band Limit				Pass
	Frequency	30MHz ~ 2400MHz	2483.5MHz ~ 25GHz	-	
	<a href="#">dB@100kHz</a>	-50	-50	-	
5	TX Mode Harmonic (Radiated), Peak				Pass
	Frequency	4900MHz	7350MHz	9800MHz	
	<a href="#">dBm@1MHz</a>	-41.7	-50	-45	
6	TX Mode Harmonic (Radiated) 1-25GHz, Average				Pass
	Frequency	4900MHz	7350MHz	9800MHz	
	<a href="#">dBm@1MHz</a>	-61	-43.7	-58	
7	Tx Radiated emission 30-1000MHz, Peak				Pass
	Frequency	475MHz	-	-	
	<a href="#">dBm@100kHz</a>	-51.5	-	-	
8	Tx Radiated emission >1GHz, Average				Pass
	Frequency	2.1GHz	7.35GHz	-	
	<a href="#">dBm@100kHz</a>	-47.6	-42	-	
9	RX Mode Spurious Emission (25MHz ~ 25GHz)				Pass
	Frequency	432MHz	-	-	
	<a href="#">dBm@100kHz</a>	-55.2	-	-	