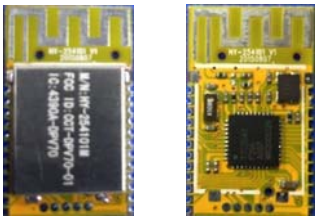
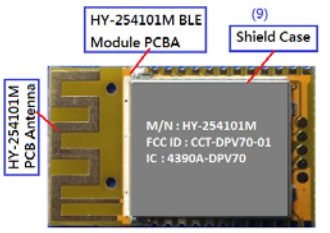
WMD410A01MT6A0 (HY-254101M) Use TTC2541 /TI CC2541 IC chip

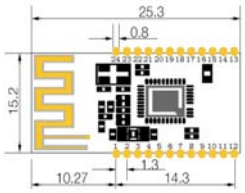
24 pin BLE Bluetooth module (with shield case) specifications.

1. Dimensions

(1-1).DIMENSION SIZE :

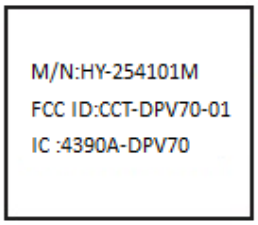




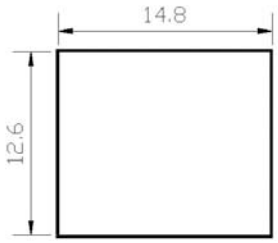


PCB SIZE:
15.2*25.3*1.0 mm
PCBA with shield case Tickness:
2.6mm

(1-2): FCC ID & IC ID Laser Print Format on the Shield Case :



Word Type: Calibri
Word Size: 4pt
Direction : Horizon

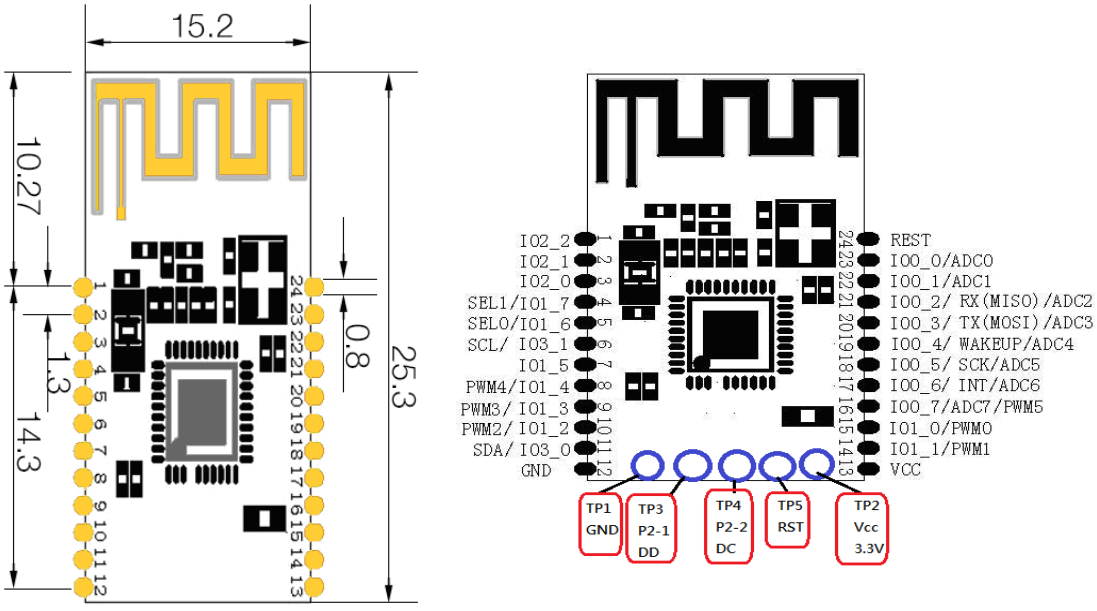


Shield Case Size:
12.6*14.8*1.56mm

1 st row: M/N : HY-254101M
2 nd row: FCC ID : CCT-DPV70-01
3 rd row: IC : 4390A-DPV70

2. Module pin definition and description of input and output ports

(2-1) HY-254101C (WMD410A01MA6A0 PCB Antenna) pin map



(2-2) Pin function table (Not shown in the I/O pin functions ,Please see Table (3-3) input and output ports description)

Pin No.	Function	Function Description
1	IO2_2 / DC	Digital I/O port 2_2 / Debug clock
2	IO2_1 / DD	Digital I/O port 2_1 / Debug data
3	IO2_0	Digital I/O port 2_0
4	IO1_7 / SEL1	Digital I/O port 1_7 MCU communication mode select, See table(5-3) Communication protcol mode selection, I/O setting Table
5	IO1_6 / SEL0	Digital I/O port 1_6 MCU communication mode select, See table(5-3) Communication protcol mode selection, I/O setting Table
6	IO3_1 /	Digital I/O port 3_1

	I2C SCL	IIC serial Clock (SCL) can be used as I2C clock pin or digital I/O. Leave floating if not used. If grounded disable pull up
7	IO1_5	Digital I/O port 1_5
8	IO1_4 / PWM4	Digital I/O port 1_4 / PWM port 4
9	IO1_3 / PWM3	Digital I/O port 1_3 / PWM port 3
10	IO1_2 / PWM2	Digital I/O port 1_2 / PWM port 2
11	IO3_0 / I2C SDA	Digital I/O port 3_0 I2C serial Data (SDA) Can be used as I2C data pin or digital I/O. Leave floating if not used. If grounded disable pull up
12	GND	BLE module grounding pin
13	VCC	BLE module power supply pin, voltage range of 2.0 ~ 3.6V
14	IO1_1 / PWM1	Digital I/O port 1_1 20mA drive capability / PWM port 1
15	IO1_0 / PWM0	Digital I/O port 1_0 20mA drive capability / PWM port 0
16	IO0_7	Digital I/O port 0_7
	ADC7	ADC port 7
	PWM5	PWM port 5
17	IO0_6	Digital I/O port 0_6
	INT	Interrupt output pin
	ADC 6	ADC port 6
18	IO0_5	Digital I/O port 0_5
	SPI SCK	SPI Bus clock signal
	ADC 5	ADC port
19	IO0_4	Digital I/O port 0_4
	WAKEUP	BLE wake up pin, Low/ wake up, High / BLE module

		automatically sleep
	ADC4	ADC port 4
20	IO0_3	Digital I/O port 0_3
	UART TX	UART Serial data bus output
	SPI MOSI	SPI Master Out , Slave input
	ADC3	ADC port 3
21	IO0_2	Digital I/O port 0_2
	UART RX	UART Serial data bus input
	SPI MISO	SPI Master input , Slave output
	ADC2	ADC port 2
22	IO0_1 / ADC1	Digital I/O port 0_1 / ADC PORT 1
23	IO0_0 / ADC0	Digital I/O port 0_0 / ADC PORT 0
24	Reset	BLE hardware reset pin (Low: reset)

Pin Function Description (The module following collectively "BLE"):

a. UART: serial bus, the default baud rate 9600bps, a single packet transmission is less than 17 bytes, package transmission intervals greater than 20ms.

b. SPI: SPI bus interface, support for less than 2M / S data transmission rate, a single packet transmission is less than 17 bytes, package transmission intervals greater than 20ms.

c. IIC: IIC bus interface, support more than 22K / S, less than 400K / S data transmission rate, a single packet transmission is less than 8 bytes, package transmission intervals greater than 20ms.

d. MOSI: Master output, Slave input.

e. MISO: Master input, Slave output.

f. SCK: SPI bus clock signal.

g. SDA: IIC data.

h. SCL: IIC clock.

i. WAKEUP: BLE wake up pin, Low _wake up, High/ BLE module automatically sleep.

j. SEL0 & SEL1: MCU and BLE communication mode selection pin. Specific details, see "(4-3) communication protocol mode selection, I/O setting table ".

k. RESET: BLE hardware reset pin, Low level reset.

l. VCC: BLE module power supply pin voltage range DC 2.0~3.6V.

m. GND: BLE module ground pin.

(2-3) .Communication protocol mode selection, I/O setting Table

No.	Channel Select PIN status		Communication interface state			Remark
	SEL1	SEL0	UART	SPI	IIC	
1	0	0	OK	X	X	1.Command mode Please contact the Vendor. 2.Description: 0 is Low,1 is high
2	0	1	OK	X	X	
3	1	0	X	OK	X	
4	1	1	X	X	OK	
5	X	X	OK	X	X	

UART mode: SEL1=0,SEL0=0 or SEL1=0, SEL0=1 or SEL0,SEL1 floating.

SPI mode: SEL1=1,SEL0=0 IIC mode: SEL1=1,SEL0=1

Table (2-4) : Input and output ports Description

Input / output Register pin No.								
I/O Port register	7	6	5	4	3	2	1	0
IO_0	16	17	18	19	20	21	22	23
IO_1	4	5	7	8	9	10	14	15
IO_2	NC	NC	NC	NC	NC	1	2	3
IO_3	NC	NC	NC	NC	NC	NC	6	11

Note: BITx=0, Low level out ; BITx=1 High level out

Direction Register pin No.								
Direction Register	7	6	5	4	3	2	1	0
DIR0	16	17	18	19	20	21	22	23
DIR1	4	5	7	8	9	10	14	15
DIR2	NC	NC	NC	NC	NC	1	2	3
DIR3	NC	NC	NC	NC	NC	NC	6	11

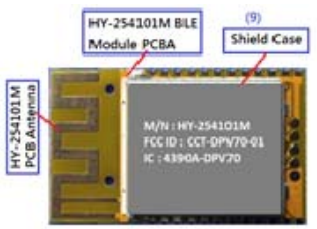
Note: BITx = 0 is corresponds port input , BITx = 1 is corresponds port output .

PWM port pin No.					
PWM5	PWM4	PWM3	PWM2	PWM1	PWM0
16	8	9	10	14	15

ADC port pin No.							
ADC7	ADC6	ADC5	ADC4	ADC3	ADC2	ADC1	ADC0
16	17	18	19	20	21	22	23

Note: The Blue Numbers of the corresponding port pin No. applications of all kinds, For example:IO0/bit0 or ADC0 pin is corresponding module pin No.23

Note: This module cannot connect to the external antenna. It has to use the existing antenna (PCB Antenna).



(3). FCC/Industry Canada Statement (to be placed on End Products)

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and

2) This device must accept any interference received, including interference that may cause undesired operation of the device.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada (IC) Statement

This device complies with Industry Canada's licence-exempt RSSs.
Operation is subject to the following two conditions:

(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Canada, avis d' Industry Canada (IC)

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage;

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

FCC CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice to OEM integrator

The end user manual shall include all required regulatory information/warning as show in this manual.

The OEM integrator is responsible for testing their end‑product for any additional compliance requirements required with this module installed.

If the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. **The end product shall haves the words “Contains Transmitter Module FCC ID: CCT‑DPV70-01, IC: 4390A-DPV70”.**