FuzzyScan COMBO Module RM3230

User's Guide

Introduction

You can connect to other Bluetooth wireless devices by integrating the RM3230 combo module to your device.

Specification

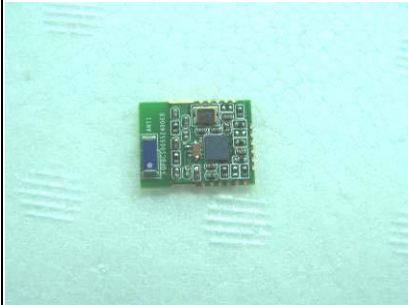|	
Brand Name	Cino
Product Name	COMBO Module
Model Number	RM3230
WLAN Standard	IEEE 802 Part 11 b/g/n
Bluetooth	Bluetooth ^{IM} 4.0 + HS compliance
Antenna Port	Support Single Antenna for both WiFi and BT
RF Frequency Band	Country dependant; Typical 2.4 to 2.497 GHz
Data Modulation	DSSS(DBPSK/DQPSK/ CCK) DFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate (Mbps)	DSSS(1/2/5.5/11); OFDM(6/9/12/18/24/36/48/54)
Channel Number	11b/g/n: 11
Transfer rates (Max)	Max UART baud rates up to 4Mbits/s
Antenna terminal	50 Ohms
Power Type	From host
Dimension	12.5 x 16.6 mm
Operating Temperature	-20 ~ +70℃
Storage Temperature	-40 ~ +85℃
Operating Humidity Range	Less than 85% (non-condensing)
Storage Humidity Range	Less than 60% (non-condensing)

Pin Assignment

NO.	Pin Name	Type	Description
1	VBAT	I	Battery supply input (3.4V~4.5V)
2	VBAT	I	Battery supply input (3.4V~4.5V)
3	GND	I	Ground
4	FM-RX	I	FM radio RF antenna port
5	GND	I	Ground
6	FM_RX_ADIO_R	O	FM analog audio output channel 2
7	FM_RX_ADIO_L	O	FM analog audio output channel 1
8	GND	I	Ground
9	RF_BG	I/O	Antenna port for WLAN and Bluetooth
10	GND	I	Ground
11	BT_HOST_WAKE	O	BT_HOST_WAKE
12	BT_RST_N	I	Low asserting reset for BT core
13	BT_WAKE	I	BT_WAKE • Asserted: Bluetooth device must wake-up or remain awake. • Deserted: Bluetooth device may sleep when sleep criteria are met.
14	BT_UART_TXD	O	Bluetooth UART Serial Output.
15	BT_UART_CTS	I/O	Bluetooth UART Clear to Send.
16	BT_UART_RXD	I	Bluetooth UART Serial Input.
17	BT_UART_RTS	I/O	Bluetooth UART Request to Send.
18	BT_PCM_IN I	I	PCM data input
19	BT_PCM_CLK	I/O	PCM clock, can be master (output) or slave (input)
20	BT_PCM_SYNC	I/O	PCM sync signal, can be master (output) or slave (input)
21	BT_PCM_OUT	O	PCM data output
22	VDD_PA3V3	I	VDD power supply (from VBAT) for the internal WLAN power amplifier.
23	WL_TRST_N	I	Connect as described in the JTAG specification or NC(unconnected)
24	WL_TDO	I	Mixed with UART_TX, Connect as described in the JTAG specification or NC(unconnected)

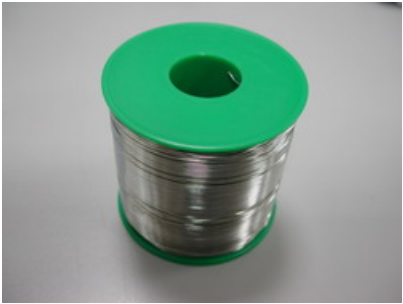| NO.	Pin Name	Type	Description
25	WL_SDIO_SPI_HSIC_SEL	I	a strapping option to select between SDIO mode (pull low) or SPI mode(pull high)
26	WL_TDI	I	Mixed with UART_TX, Connect as described in the JTAG specification or NC(unconnected)
27	WL_TCK	I	Connect as described in the JTAG specification or NC(unconnected)
28	WL_TMS	I	Connect as described in the JTAG specification or NC(unconnected)
29	SDIO_HOST_WAKE	I/O	General purpose interface pin.
30	BT_REG_ON	I	Used by PMU (OR-gated with WL_REG_ON) to power up or power down internal BCM4330 regulators used by the BT/FM section
31	WL_REG_ON	I	Used by PMU (OR-gated with BT_REG_ON) to power up or power down internal BCM4330 regulators used by the WLAN section. This pin is also a low-asserting reset for WLAN only
32	JTAG_SEL	I	JTAG selection pin.
33	VDDIO	I	Digital I/O supply (1.8V or 2.5V)
34	HSIC_STROBE	I/O	HSIC bidirectional data strobe signal
35	HSIC_DATA	I/O	HSIC bidirectional DDR data signal
36	GND	I	Ground
37	LPO_32K	I	Input for external low-power 32.768kHz Clock (Sleep Clock).
38	GND	I	Ground
39	SD_DAT0	I/O	SDIO data 0. This pin has an internal weak pull-up resistor.
40	SD_CLK	I/O	SDIO clock. This pin has an internal weak pull-up resistor.
41	SD_DAT1	I/O	SDIO data 1. This pin has an internal weak pull-up resistor.
42	SD_CMD	I/O	SDIO command. This pin has an internal weak pull-up resistor.

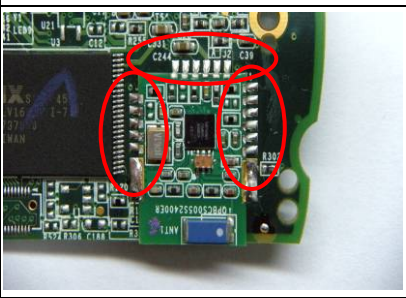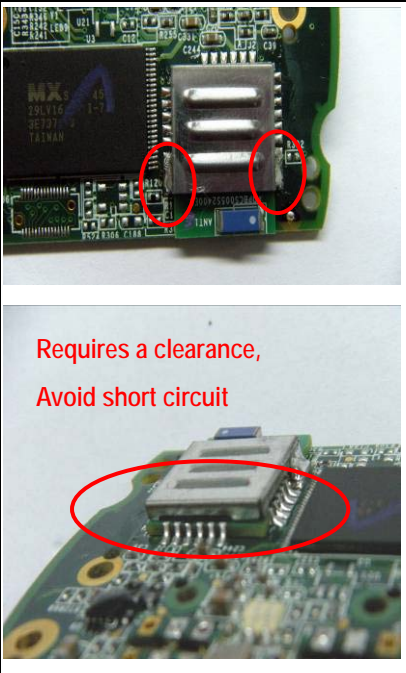| NO.	Pin Name	Type	Description
43	SD_DAT3	I/O	SDIO data 3. This pin has an internal weak pull-up resistor.
44	SD_DAT2	I/O	SDIO data 3. This pin has an internal weak pull-up resistor.
45	SR_PMU_VSS	I	Switching regulator ground & PMU block analog ground
46	EXT_PWM_REQ	I	Auxiliary PMU control inputs.
47	VIN_LDO	I	Buck regulator: Battery Voltage Input
48	SR_VLX1	O	Core buck regulator: output to inductor and capacitor tank (2.2uH & 4.7uF are required).
49	GND	I	Ground
50	GND	I	Ground
51	GND	I	Ground
52	GND	I	Ground
53	ANT_CTRL_AUX	O	Antenna Switch control line. Default setting is high.
54	ANT_CTRL_MAIN	O	Antenna Switch control line. Default setting is high.
FM	FIDUCIAL MARK	N/A	The FM mark is used for USI manufacture only.

Module Installation Manual

Material:

Description	Picture	Description	Picture
CD_USI PCBA Q'ty:1		Q'ty:1	
Shielding Case Q'ty:1			
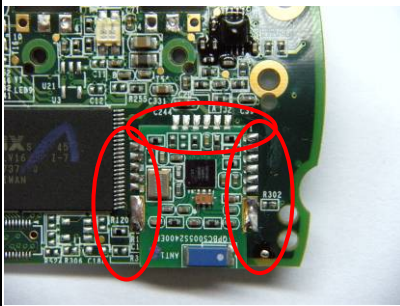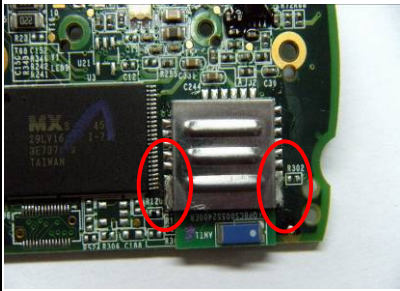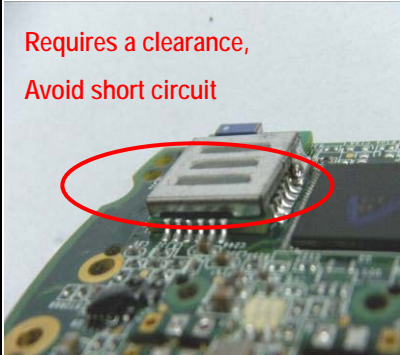
Tools:

Description	Picture	Description	Picture
Iron		Tin wire	
Fan			

Job Description and Notes:

Step	Picture	Description
01		Job Type: Put CD_USI PCBA on board, solder fixed, avoid short circuits. Note: Welding CD_USI PCBA temperature of 350^0C ± 10^0C, not too high or too low.
02	 Requires a clearance, Avoid short circuit 	Job Type: The Shielding Case welded on CD_USI PCBA, careful not to short circuit and CD_USI PCBA. Note: 1 Welded shielding case temperature of 350^0C ± 10^0C, not too high or too low. 2 Shielding Case not skew or subsidence short circuit.

Finished:

Picture	Description
Requires a clearance, Avoid short circuit	1. Welded shielding case temperature of $350^0C \pm 10^0C$, not too high or too low. 2. Welding CD_USI PCBA temperature of $350^0C \pm 10^0C$, not too high or too low. 3. Welding CD_USI PCBA requires a clearance and avoid short circuit. 4. Shielding Case not skew or subsidence short circuit.

Regulatory Information

The Wi-Fi is designed to be interoperable with any Wi-Fi technology product that is incorporating Direct Sequence Spread Spectrum (DSSS) and OFDM data modulation and complies with the IEEE 802.11b/g/n.

Safety

The Wi-Fi, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this device, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The Wi-Fi device operates within the guidelines found in radio frequency safety standards and recommendations. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature. In some situations or environments, the use of a Wi-Fi device may be restricted by the proprietor of the building or responsible representatives of the applicable organization.
Examples of such situations include the following:
➢ Using the Wi-Fi equipment onboard airplanes, or
➢ Using the Wi-Fi equipment in any other environment where the risk of interference with other devices or services is perceived or identified as being harmful.
➢
If uncertain of the policy that applies to the use of wireless devices in a specific organization or environment (an airport, for example), ask for authorization to use the Wi-Fi device before turning it on.

This device has been certified to the following radio standards:
FCC Part 15 Subpart C, IC Part 15 Subpart C
CE EN300 328, Taiwan LP0002 (NCC)
Japan TELEC T401 (MIC)

Warning

802.11b/802.11g/802.11n/BT 警語：

第十二條→ 經型式認證合格之低功率射頻電機，非經許可，公司，商號或使用者均不得擅自變更頻率，加大功率或變更原設計之特性及功能。

第十四條→低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。 低功率射頻電機須忍受合法通信或工業、科學及醫療用電波幅射性電機設備之干擾。

802.11a 警語：

無線傳輸設備（UNII）

在 5.25-5.35 秭赫頻帶內操作之無線資訊傳輸設備，限於室內使用。 (4.7.5)

無線資訊傳輸設備忍受合法通信之干擾且不得干擾合法通信；如造成干擾，應立即停用，俟無干擾之虞，始得繼續使用。 (4.7.6)

無線資訊傳設備的製造廠商應確保頻率穩定性，如依製造廠商使用手冊上所述正常操作，發射的信號應維持於操作頻帶中。(4.7.7)

LP0002 4.3無線電遙控器

(1) 限單向控制。
(2) 不得於機場及其飛航管制區內使用。
(3) 於軍事管制區內應依其管制規定使用。
(4) 使用航空模型飛機遙控器亦須符合其他有關無線電遙控航空模型飛機之管理規定。

LP0002 3.4.2 Full Module Approval

*在314-316MHz及433-435MHz作業者：*如為手動發射器材者須有一開關，按下並釋放此開關後5秒內應自動停止發射。

或具自動控制裝置者每次發射時間應少於5秒。

*除314-316MHz及433-435MHz作業者*之作業頻率以外者：如為手動發射器材須有一開關，按下此開關後5秒內應自動停止發射。具自動控制裝置者每次發射時間應少於5秒。

選擇性填寫
Case By Case 還有一些不常遇到的產品情況增列到使用手冊中。

LP0002 4.4 民用頻段無線電對講機 (Citizens Band Radio Service)

民用頻段無線電對講機之第九頻道定為緊急頻道，不得作一般通話使用。使用者並應經常守聽該頻道之信息。 民用頻段無線電對講機使用者遭遇緊急事故，請求救援時，應於第九頻道先呼「緊急求救」三次，再說明求救人、事故、地址及需求。無人回應時，得改用其他任何頻道呼救。 接獲前項求救信息者，應即中止通話並採適宜之救援措施。

Federal Communication Commission

Interference 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

LABEL OF THE END PRODUCT:
The final end product must be labeled in a visible area with the following " Contains TX FCC ID: SBC-RM3230 ".

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.