



PRODUCT SPECIFICATION

Combo (Wi-Fi 6 + BLE 5.3) Module

2.4GHz 802.11.b/g/n/ax

Model Name: HY-330101

TI CC3301

Version 1.1

Change History

Revision	Date	Author	Change List
1.0	2023/11/29	Mark Lin	Initial release
1.1	2023/12/05	Jack Guo	Revise

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1 PRODUCT OVERVIEW

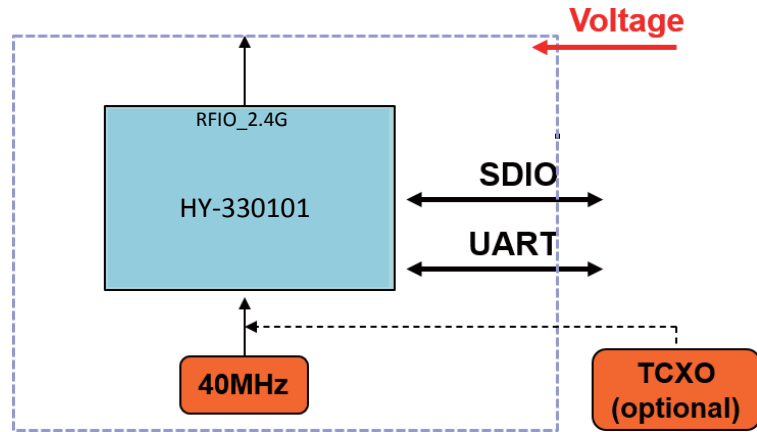
1.1 FEATURES

- Wi-Fi 6 (802.11ax), 2.4 GHz, 20 MHz, single spatial stream
- Bluetooth low energy 5.3
- Companion IC to any processor or MCU host capable of running a TCP/IP stack
- MAC, baseband, and RF transceiver with support for IEEE 802.11 b/g/n/ax
- Integrated 2.4-GHz PA for complete wireless solution with up to +20-dBm output power.
- Operating temperature: -40°C to +105°C
- Application throughput up to 50 Mbps
- RoHS compliance
- Halogen Free compliance
- Compact dimension 12 x 12 x 2.5 mm, QFN-44

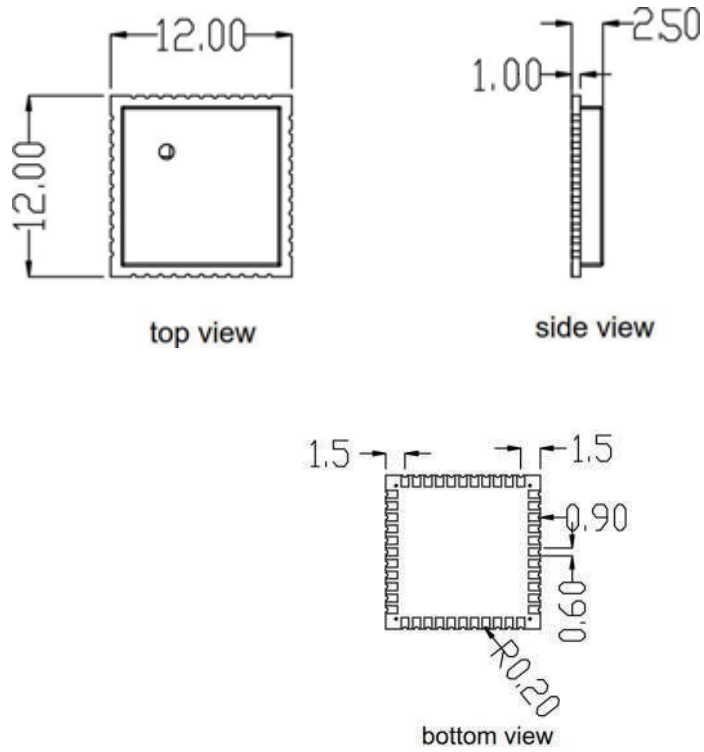
1.2 GENERAL SPECIFICATIONS

Main Chipset	TI3301
Standard	IEEE 802.11b/g/n/ax, Bluetooth low energy 5.3
Bus Interface	SDIO/ UART
Frequency Range	2.412GHz~2.472GHz
Transmit Output Power	WLAN Performance: 2.4-GHz Transmitter Power @1 Mbps DSSS: 20.5 dBm @6 Mbps OFDM: 20.5 dBm @54 Mbps OFDM: 17 dBm @HT MCS0 MM: 20 dBm @HT MCS7 MM: 16.5 dBm @HE MCS0: 20 dBm @HE MCS7: 16 dBm BLE Performance: 20 dBm
Receive Sensitivity	WLAN Performance: 2.4-GHz Receiver Characteristics (Sensitivity: 8% PER for 11b rates, 10% PER for 11g/n/ax rates) @1 Mbps DSSS -98 dBm @2 Mbps DSSS -95 dBm @11 Mbps CCK -90 dBm @6 Mbps OFDM -93.5 dBm @54 Mbps OFDM -75.8 dBm @HT MCS0 MM 4K -93 dBm @HT MCS7 MM 4K -73.6 dBm @HE MCS0 4K -91.3 dBm @HE MCS0 4K ER upper 106 -93.3 dBm @HE MCS7 4K -72.4 dBm BLE Performance: BLE 1Mbps (LE 1M) Receiver Characteristics Receiver sensitivity: -99.4dBm (37-byte packets) Receiver sensitivity: -98.5dBm (255-byte packets)
Operating temperature	-40°C to +105°C
Operating Voltage	V_{MAIN}, V_{IO}, V_{PP} : 1.8 V (1.62V to 1.98V) V_{PA} : 3.3V (3.0 V to 3.6V)

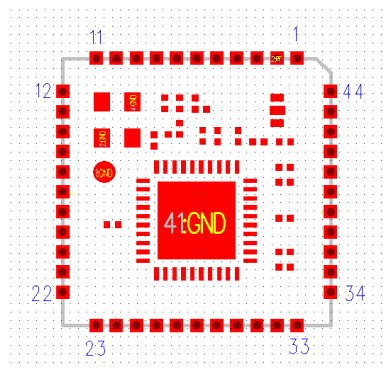
1.3 BLOCK DIAGRAM



1.4 MODULE DIMENSION



1.5 MODULE PINOUT



1.6 PIN DEFINITION

PIN	Name	PAD type	Description
1	GND	-	Ground
2	RF_BG	I/O	Bluetooth Low Energy and WLAN 2.4-GHz RF port
3	GND	-	Ground
9	VBAT	P	Internal power supply input
10	XTAL_IN	NA	XTAL_P
11	XTAL_OUT	NA	XTAL_N
12	NRESET	I	Reset line for enabling or disabling device (active low)
13	HOST_IRQ_WL	I/O	Interrupt request to host for WLAN
14	SDIO_D2	I/O	SDIO data pin
15	SDIO_D3	I/O	SDIO data pin
16	SDIO_CMD	I/O	SDIO card command pin
17	SDIO_CLK	O	SDIO clock pin
18	SDIO_D0	I/O	SDIO data pin
19	SDIO_D1	I/O	SDIO data pin
20	GND	-	Ground
22	VDDIO	P	I/O power supply input
24	SLOW_CLK_IN	I	32.768-kHz RTC clock input
31	GND	-	Ground
33	GND	-	Ground
36	GND	-	Ground
41	UART_RTS	I/O	Device RTS signal - flow control for BLE HCI
42	UART_TX	I/O	UART TX for BLE HCI
43	UART_RX	I/O	UART RX for BLE HCI
44	UART_CTS	I/O	Device CTS signal - flow control for BLE HCI
4,5,6,7,8,21,23,30,25,26,27,28,29,32,34,341,42,43,44	NA	NA	NA