Change Description

Product Name:	EZ-BLE PRoC Module
FCC ID:	WAP2011
IC Model No.:	CYBLE-012011-00/ CYBLE-212019-00/ CYBLE-212020-01
IC :	7922A-2011

Modules CYBLE-012011-00, CYBLE-212019-00 AND CYBLE-212020-01 have the same PCB, periphery parts and the encapsulation of the main chip.

Module	IC Part Number	CPU Speed (MHz)	Flash Size (KB)	Package	Bluetooth version
CYBLE-012011-00	CYBL10563-56LQXI	48	128	76-WLC-SP	4.1
CYBLE-212019-00	CYBL10573-56LQXI	48	256	56-QFN	4.1
CYBLE-212020-01	CYBL11573-56LQXI	48	256	76-WLC-SP	4.2

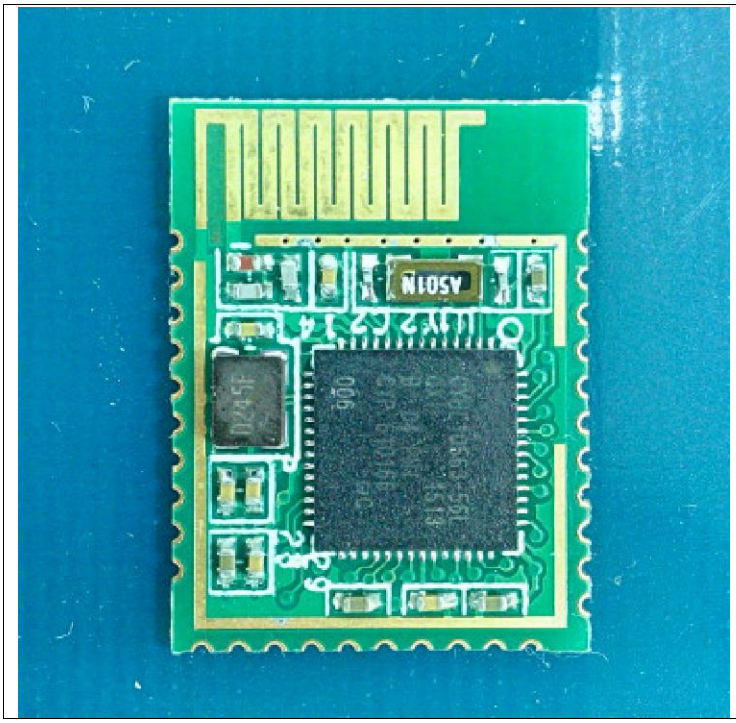
The RF character of these modules are the same.

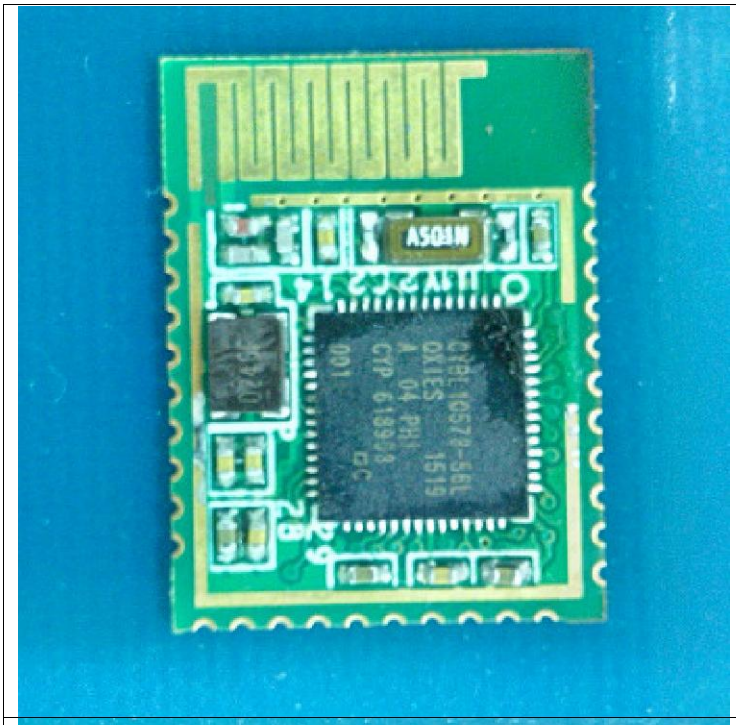
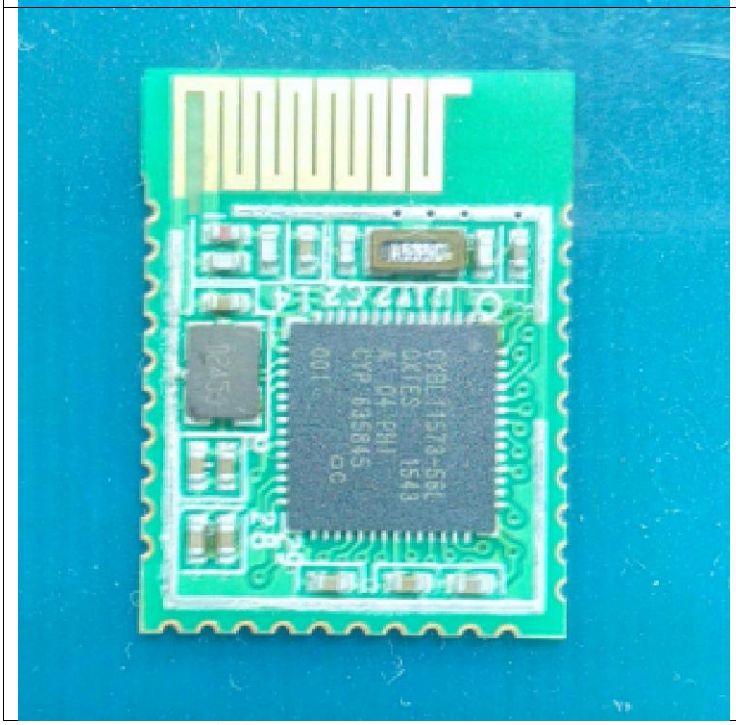
Specifications of EUT

Operating Frequency	2400-2483.5MHz
No. of channel	40
Channel Spacing	2 MHz
Modulation	GFSK
Transmit Power (ERP)	2.16 dBm / 1.64437 mW
Data Rate	1 Mbps
Antenna Type	PCB Antenna
Number of Antenna	One
Antenna Gain	-0.5 dBi
Supply Voltage	1.9 V to 5.5 V(3.3V nominal for test jig)
Dimension	19.2 mm x 14.52 mm
Environmental	Operating: -40 ℃to 85 ℃

Below is detailed difference between BLE4.2 and BLE4.1 chip:

1) 4.2 has improved security compared to 4.1 – this is ECDH on top of AES-128 in 4.2, whereas 4.1 is AES-128 only. This allows for transfer without having to exchange keys over the air. ECDH essentially embeds the key changes into the data transfer.
2) 4.2 has improved privacy compared to 4.1 – MAC address changes after a period of time for the BLE device. This is the same in 4.1 and 4.2, however in 4.2 the MAC address changing is happening in the link layer (where it was done in the GATT layer in 4.1). This change makes it so that you can use the feature without waking the entire system/stack.
3) Increase the maximum packet length from 37 bytes to 255 bytes.

	CYBLE-012011-00

	CYBLE-212019-00
	CYBLE-212020-01

Xuejiao Zhang

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