

Operational Description

Product name: FIRE ELF Bluetooth Flashlight Speaker(Including PowerBank)

Model name: AF-A1BC

1. U1, CSR BC8 is a Bluetooth's CPU, It is mainly used for audio data transmission
2. U2, FM24C512 is a E2, it used to store programs.

Operation Descriptions

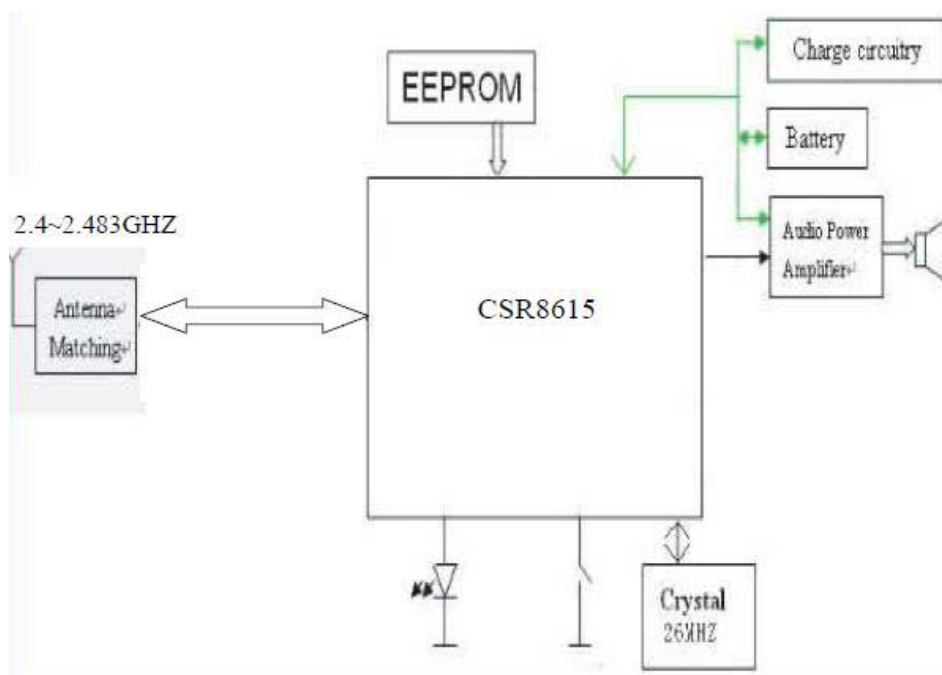
The transmitter is a **RADIO** operating at **2400-2480MHz** band. The transmitter is powered by a **3.7V** battery and the transmitting frequency is crystal controlled. The operation is achieved by different combinations of form pulse modulating signal on the **2400MHz** carrier frequency.

The **26MHZ** crystal oscillator drives the base of **U1 (CSR BC8)**. The modulation provided by **U1(CSR BC8)**

Antenna, Ground and Power Source

The antenna consists of a **2.4GHz Single dipole antenna coil Wire antenna**, There is no external ground connection. Electric current is supplied by a **3.7 V** primary battery

Block diagram



Performance parameters

Operating frequency:	BT4.0 / 2.4GHz~2.48GHz
Channel number:	79 Channels
Modulation type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Antenna Type:	Wire antenna with -0.61dBi gain (Max)
Bluetooth protocol	HFP V1.6, HSP V1.2, A2DP V1.2, AVRCP V1.4, DI V1.3
Transmission distance	10M
Sensitivity	-80dBm<0.1%BER

Bluetooth

GFSK-BLE (Peak)			
Channel	Channel 00	Channel 19	Channel 39
Target (dBm)	-2.0	-0.2	0.7
Tolerance $\pm$ (dB)	1.0	1.0	1.0
GFSK (Peak)			
Channel	Channel 00	Channel 39	Channel 78
Target (dBm)	-1.0	-0.1	0.8
Tolerance $\pm$ (dB)	1.0	1.0	1.0
8DPSK (Peak)			
Channel	Channel 00	Channel 39	Channel 78
Target (dBm)	-3.0	-0.6	0.3
Tolerance $\pm$ (dB)	1.0	1.0	1.0
$\pi/4$ DQPSK (Peak)			
Channel	Channel 00	Channel 39	Channel 78
Target (dBm)	-2.0	-0.2	0.7
Tolerance $\pm$ (dB)	1.0	1.0	1.0