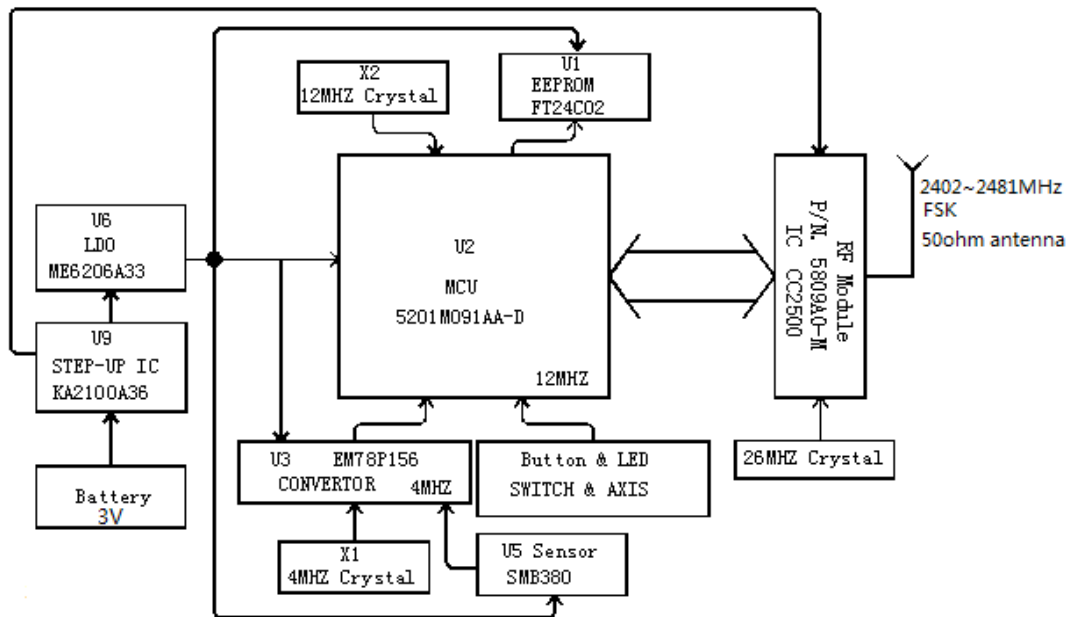


## Functional Description

1. When the guitar is turned on, the batteries provide a voltage to the voltage step-up IC (U9) which will boost the voltage to 3.6V offering the working voltage for the RF module.
2. The voltage regulator IC U6 will regulate the 3.6V to 3.3V and offer it to U3, U5, U1, U2.
3. If the Guitar is working in Slave mode, U2 will search all the channels via the RF module for any master device.
4. If the master device exists, U2 will check the received data to confirm it is connectable.
5. If the device is connectable, U2 will make a reply via the RF module and connect with it. The channel indicator and connect indicator will flash. The master device will send a random code to U2 and it will be stored in U1.
6. The master device will send a request signal to the U2 via RF module to get the axis value and button value.
7. U5 is an acceleration sensor which will send out the X, Y, Z three axis acceleration value to U3. And U3 will translate the value and send it to U2. Also, the triggered button's value will also be sent to U2. U2 will process these values and send them to the RF module for modulation and sending out to the master device.
8. The master device receives the data and verifies it and will take a corresponding response.

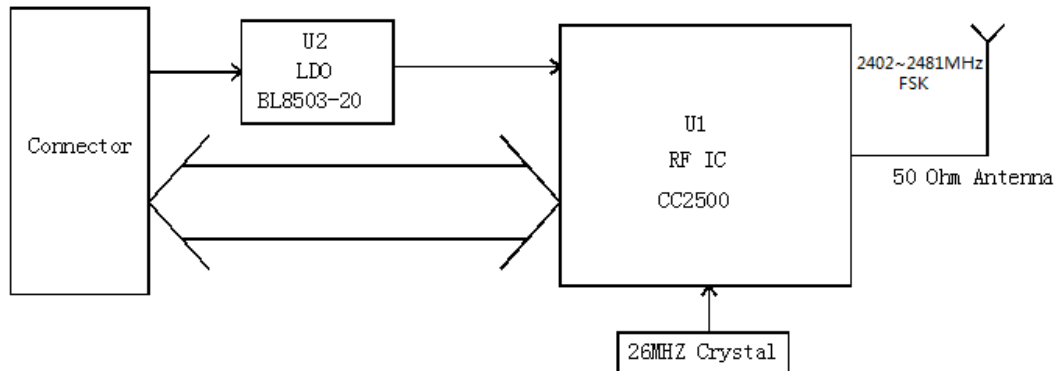
### Typical Product Characteristics:

Items	Description
Type of Modulation	FSK
Number of Channels	80
Frequency Band	2402 MHz ~ 2481 MHz
Antenna Type	PCB Antenna
Testing Duty Cycle	100%
Test Power Source	DC 3V (2XAA) From battery
Temperature Range(Operating)	0 ~ 50 °C



## Description:

- 1) Battery: provides a 3V power to the circuit.
- 2) U9 KA2100A36: boosts the battery voltage to 3.6V for offering voltage to the RF module.
- 3) U6 ME6206A33: regulates the 3.6V voltage to 3.3V for supplying power to U1, U2, U3, U5.
- 4) U5 Sensor SMB380: is an acceleration sensor which will send out the X, Y, Z axis acceleration value to U3. The communication way between U3 and U5 is I2C.
- 5) U3 EM78P156: is a convertor. The data from the sensor U5 will be converted by the U3 and then sent to MCU-U2 for further processing. The communication way between U3 and U2 is UART.
- 6) X1 4MHZ Crystal: provides a 4MHz working frequency for U3.
- 7) BUTTON & LED SWITCH & AXIS: BUTTON, SWITCH & AXIS are the input buttons which will send their own key values to the MCU-U2 when pressed. LED are the player indicators.
- 8) X2 12MHZ Crystal: provide a 12MHz working frequency for MCU-U2.
- 9) U1 FT24C02: stores the random code. When the guitar connects with the receiver, the receiver will send a random code to guitar which will be stored in this EEPROM U1.
- 10) U2 5201M091AA-D: is the main MCU which will process all data from periphery circuit or RF module.
- 11) RF Module: will send the data of MCU-U2 out and receive the signal from receiver to MCU. The communication way between MCU and RF module is SPI.
- 12) 26MHZ Crystal: provides a 26MHz frequency for RF module's main IC.



## Description:

- 1 Connector: The communicating circuit between the RF IC and MCU which transfers the data between the two ICs and also provides a 3.6V voltage to the RF module.
- 2 U2 LDO BL8503: converts 3.6V to 2V for the RF IC's power supply.
- 3 U1 RF IC CC2500: modulates the data from MCU and send the signal out by the 50ohm matched antenna. The modulation is FSK. It uses 80 channels for communication and the frequency is 2402~2481MHz with 1MHz interval for each channel. Antenna type: PCB.
- 4 26MHZ Crystal: provides a 26MHz working frequency for the RF IC.