

## **1. Outline**

Wireless audio transmitter & receiver that use 2.4GHz wide banded, frequency range is 2402MHz~2480MHz, transmitter output is 0dBm, i.e. 1mW. This has 15MHz of frequency hopping extent per one channel.

## **2. Schematic flow chart - transmitter**

### **2.1 Microphone (condensor microphone)**

It is input section to be inputted audio signal.

It's operating voltage is 1.5V~3.0V, and makes microphone act by supplying 2.2V.

### **2.2 CODEC**

It supplies Mic Bias voltage (from input section) and converts inputted signal into ADC (analog digital converting) and do sampling 2.4KHz.

### **2.3 CPU**

It detects voltage of internal battery and codec's various functions. Also, controls NRF2401AG RF IC (made by Nordic company) and WM8731LEF/R IC (made by CODEC Wolfson).

### **2.4 LED DISPLAY**

After sending voltage data (from voltage detect section) to CPU, controls LED display by using data transferred. Also, send pairing data send from NRF2401AG RF IC (made by Nordic company) to CPU, controls LED display by using data transferred.

### **2.5 MODEM**

Data (from Mic input section) is inputted into CODEC, and digital ADC data (inputted into CPU) is transferred to internal antenna through RF IC and then data is transferred to fixed frequency.

## **3. Schematic flow chart -Receiver**

### **3.1 Internal antenna**

Receives transmitted frequency and transmits to MODEM.

### **3.2 MODEM**

Transmits data received by antenna to CPU.

### **3.3 CPU**

Transmits data (received by MODEM) to CODEC and controls surrounding various circuit.

### 3.4 CODEC

It does DAC (Digital analog converting) by using received data from CPU, transfer audio data (inputted from Wire Mic & Audio External Input) to CPU or Amplifier section.

### 3.5 Volume UP/DOWN KEY

Data (produced by controlling key) is transferred into CPU, CPU controls LCD DISPLAY circuit and signal gain of CODEC.

### 3.6 AMP

Amplifiers audio signal (inputted from CODEC) and runs speaker. It is fixed gain method and analog BTL amplifier, not digital amplifier.

## **4. Internal Battery**

### 4.1 Transmitter battery

Transmitter battery is a Lithium polymer battery, which has 3.3V ~4.2V voltage range and 240mAh of capacity.

It's charging fills up 120mAh per hour and external charger is equipped with CPU. Current consumption value is 3.5mAh per hour.

### 4.2 Receiver battery

Receiver batteries are connected in serial, have 6.6V ~ 8.4V of voltage range , 2000mAh capacity.

External charger is equipped with CPU, charging fills up 800mAh per hour. Current consumption value is 200mAh per hour.