

Circuit Description of Receiver(RX)

(Ultra-e-2010, 2020, 2030)

1. RF Receiving Circuit

A. Unnecessary signal and noise in the signal received from transmitter is filtered in the Resonance Circuit(L1,C1) and Transistor(Q1) makes the filtered signal clearer. The cleared signal enters into Oscillation & Detection Circuit through Condenser(C4).

B. Oscillation & Detection Circuit

The signal from Transistor(Q1) is mixed up and detected in Oscillation & Detection Circuit(Q2). The high frequency signal and noise in detected signal are filtered in Coil(L3) and enters in Amplification Circuit.

C. Amplification Circuit

The detected signal is amplified and converted into square-wave pulse in Amplification Circuit and goes into MPU(U4)

2. MPU(Micom)

MPU analyzes the pulse coded signal received from transmitter.

When this pluse coded signal is the same as the pluse coded signal stored in Memory Chip(U2), the following functions are performed.

A. Stimulation Function

When the pulse coded signal from the transmitter is the same as the stimulation signal stored in Memory Chip(U4), this signal is transferred into Analog Switching Circuit(U2 on Main PCB) Out-put from one of 8 pots in Analog Switch goes into Transistor(Q8) which has the adjusted intensity level. When the Transistor(Q8) supplies with the received signal to the Transistor(Q7), Transformer(T1) boosts the voltage several hundreds times.

B. Vibration Function

When the pulse coded signal from the transmitter is the same as vibration signal stored in Memory Chjp(U4), this signal is transferred into Transistor(Q6) and Vibration motor is operated.

C. Beep Function

When the pulse coded signal from the transmitter is the same as beep signal stored in

Memory Chip(U4), this signal is sent to Transistor(Q5) and Beeper is operated.

D. Intensity Level Adjustment Function

When the pulse coded signal from the transmitter is the setting signal of intensity level, this signal is stored as the adjusted intensity level in EEP Rom(U2 on control PCB).

3. Power Circuit

A. When magnet on the buckle of receiver belt touches Reed Switch in receiver unit, power is supplied to main circuit by Transistor(Q3).

And then MPU(Micom) starts operation, power is supplied continuously after removing the magnet from Reed Switch.

B. Voltage Regulation Circuit

Voltage Regulation IC(U5) converts 6volt into constant-voltage regulated power(4volt).