

PET TRAINING SYSTEM

1. OUR INTENTION

We would like to try the use of USTECH LAB service first on the transmitter for US as a trial. Once it go through smoothly, we would like also to apply for Canada type approval for both the transmitter and also the receiver.

2. THE PRODUCT

This is a radio frequency based remote control design around radio frequency IC from RF Micro Device. The two IC of choice is RF2917 and RF2512. The devices are designed for compliance to regulatory requirements as intended transmitter in following standards:

- US FCC Part 15.249 (900MHz version)
- Canadian TRS RSS210 (900MHz version)

The specification of the device is as follow:

SPECIFICATION: 912MHZ TRANSMITTER

FEATURE	VALUE	NOTES
Frequency	912.03MHz	+/-25ppm
RF Power	+9dBm	Comply with US FCC Part 15.249 and Canadian TRS RSS210 with 50 OHM antenna
Modulation	FSK	
Derivation	+/-50kHz	
Data rate	20kbits/s	
TX sequence	<ul style="list-style-type: none">▪ Preamble▪ Address▪ Key Code	Code will be repeated for about 600ms to reach a wakeup time slot of the receiver (500ms)
Buttons	3	Synapses on bottom layer
Battery	6 volts	
Transmission distance with RX	>100m	
Current drain		
Active	40 mA	
Standby	<10uA	

SPECIFICATION: 912MHZ RECEIVER

FEATURES	VALUE	NOTES
Frequency	912.03MHz	+/-25 ppm
Input sensitivity	-103dBm	50Ohms, for detecting the control sequence
RX Scheme		<ul style="list-style-type: none"> ▪ Wakes up every 500ms & tries to detect a signal for about 2 ms. If no signal, standby. ▪ If signal occurs, it tries to detect a preamble. <ul style="list-style-type: none"> ▪ If no preamble, standby. ▪ If preamble occurs, it tries to receive an address and a control sequence (tries two times and compares).
Battery	6 volts	Internal : 3 volts
Current drain		
Active	14mA	
Standby	30uA	
Average	40uA	No input signal
Spray	110mA	
Buzzer	40mA	

3. USE OF THE TRANSMITTER

There's altogether three buttons on the transmitter. The one close to the battery is Button 3, the middle one is Button 2, the third button is Button 1.

Button 1 – When pressed, it will send a signal and address code out. The right receiver with right address will recognize the transmission and turn on the buzzer in the Receiver for a short pattern.

Button 2 – When pressed, it will send a signal and address code out. The right receiver with right address will recognize the transmission and turn on a solenoid in the Receiver for a short while.

Button 3 – When pressed, it will send a signal and address code out. The right receiver with right address will recognize the transmission

and turn on the solenoid in the Receiver for a slightly long pattern compared with when Button 2 is pressed.

The whole Transmitter only function for a short while and have electricity pass through when one of its button is pressed. However, even when any of those buttons is pressed accidentally, the Transmitter will not continuously on to send continuously signal.