

Kwok's Winty Manuyfacturing LTD

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ENGINEERING DEPARTMENT

ITEM NO:

MODEL NAME:MINI HELICOPTER PLANE

FRRQUENCY: 49.890MHZ

DATE: 26-10-2007

BY: B.LEE

REV: ORIG

(CIRCUIT DESCRIPTION)

****CIRCUIT DESCRIPTIONS**

IN RECEIVE MODE

Q1 IS THE UNTUNED RF AMPLIDIER.

IC1 IS THE SUPERHETERODYNEIC THAT CONTAINS LOCAL OSCILLATOR, MIXER, AND IF AMPLIFIER, AND SIGNAL DETEDTOR

IC2 IS THE SIGNAL DECODER AND CHANNELS SEPERATION IC.

IC4 A/B ARE THE UP-DOWN & BACKWARD-FORWARD POWER MOTORS DRIVER.

IC3 IS THE DC VOLTAGE REGULATOR FOR FRONT END.

ENERGRY IS SUPPLIED BY A 3.7 VDC 200MA/H RECHARGED TYPE LITHUM BATTERY.

ANTENNA AND GROUND CIRCUITRY.

THIS UNIT MAKES USE OF AN EXTENAL 12-INCH ANTENNA. THE ANTENNA IS INDUCTIVELY COUPLED.

THE UNIT RELIES ON THE GROUND TRACE OF THE PRINTED CIRCUIT BOARD. NO EXTERNAL GROUND IS PROVIDED.

****BACKGROUND**

THE DEVICE DESCRIBED HEREIN IS A WIRELES (RF) TOY AREOPLANE CONTROLLER TRANSMITTER FOR USE WITH THE TOY AEROPLANE CONTROLLED RECEIVER. IT HAS ONLY ONE CHANNEL OF OPERATION WHICH THE USER MAY CHOOSE ONLY. AND IS USED TO SEND BUTTON-STATE DATA FROM THE CONTROLLER TO A WIRELESS RECEIVER CONNECTED WITH MOTORS

****TYPICAL OPERATION**

TYPICAL OPERATION WOULD INVOLVE THE USER TURNING ON THE UNIT TO THE TOY GAME WHEN TURNED ON, THE UNIT COMES UP ON THE DEFAULT CHANNEL AND TRANSMITS A CONTINUOUSLY STEAM DATA.THE USER CAN NOT, AT WILL , CHANGE TO ANY OTHER OF THE PREDEFINED CHANNEL.

CONFIGURATION

THE RECEIVER RF CIRCUITRY CONSISTS OF A CRYSTAL CONTROLLED OSCILLATOR,THE MAIN CHARACTERISTICS OF THIS CONFIGURATION

ARE SHOWN BELOW:

FREQUENCY RANGES	49.890MHZ	
OCCUPIED BANDWIDTH (-26DB)	<100KHZ	MAX
FREQUENCY STABILITY	.+/-10 PPM	MAX
MODULATION METHOD	NA	
OUTPUT POWER	80 DBUVM	MAX

REFERENCE OSCILLATOR

A 49.435MHZ CRYSTAL OSCILLATOR IS USED TO GENERATE THE REFERENCE FREQUENCY. IT HAS A STABILITY OF +/-10 PPM.

AMPLIFIER

THESE RX SYSTEM NO AMPLIFIER FOR RX.

ANTENNA

THE SYSTEM ANTENNA IS A COPPER ANTENNA ROD LINKED TO PCB. ANTENNA ROD CAN BE TURNED OUP OR IN PENDNG USER'S WISH.

MICROCONTROLLER

THE RX SYSTEM IS CONTROLLED BY A SMALL MICROCONTROLLER RUNNING WITH A 49.4350MHZ +/-10 PPM FOR FIRST LOCAL OSCILLATOR (MIXER IC)