AIRTRONICS

RD6000

Radio System Operating Manual

Airplane • Helicopter • Sailplane

This equipment has been tested in accordance with the requirements contained in the appropriate Commission regulations. To the best of our knowledge, these tests were performed using measurement procedures consistent with industry or Commission standards and demonstrate that the equipment complies with the appropriate standards. Each unit manufactured, imported or marketed, as defined in the Commission's regulations, will conform to the sample(s) tested within the variations that can be expected due to quality production and testing on a statistical basis.

We further certify that the necessary measurements were made by Kansai Electronic Industry Development Center, Ikoma Emission Measurement Station, 10830, Takayama-Cho, Ikoma-City, Nara, 630-01 Japan.

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RD6000 RADIO CONTROL SYSTEM

Thank you for selecting the Airtronics RD6000 Radio System. In designing the RD6000 we have made every effort to provide you with a radio that will allow you to extract the maximum performance from you powered airplane, sailplane or helicopter, while at the same time simplifying the task of setting up and adjusting your model. These instructions are written in great detail to help you understand what all of your RD6000 capabilities are. Because of the many features of the RD6000, this manual is quite long. Donit be intimidated! To actually use the system, you may only need to read the INTRODUCTION section, and study the section that applies to your type of aircraft. Each type of aircraft, i.e., fixed wing and helicopter has its own self-contained section describing each feature and its implementation.

Again, we appreciate your selection of an Airtronics Radio Control System and wish you many hours of flying enjoyment.

RD6000 TRANSMITTER SPECIFICATIONS:

Transmitter Type:	6 Channel, Dual Stick with propriety Microprocessor
Dimensions:	W: 7.5" x H: 8.0" x D: 2.5"
Weight:	1lb. 10ozs.
Power Output:	600 mWatts
Frequencies:	72 MHz
Modulation:	PPM/FM, PCM/FM and PPM/FM Invert
Power Supply:	9.6 Volt, 600 mAh Sanyo NiCd
Current Drain:	180 MA
Temperature Range:	0 to160 degrees F.
Pulse Width:	1.5 ms (nominal)

RD6000 RECEIVER SPECIFICATIONS

Receiver Specifications:	92777 PPM/FM 7 Channel, Super Narrow Band, with Universal "Z" Connectors. (The following additional receivers are compatible if Part number 99399 "Z" Adapters are used): 92745 PPM/FM 4 Channel, Micro Super Narrow Band, 92765 PPM/FM 6 Channel, Super Narrow Band, 92065 PCM/FM 6 Channel, Super Narrow Band, or 92185 PCM/FM 8 Channel, Super Narrow Band receiver.
Receiver Sensitivity:	1.5 microvolts
Dimensions:	L: 2.25", W: 0.6", H: 0.82"
Weight:	1.2 ounces
Receiver Power Supply:	Four Cell, 4.8 Volt, 600 mAh Sanyo NiCd

RD6000 TRANSMITTERS FEATURES

The RD6000 narrow band PPM/FM ñ PCM/FM computer radio control system is designed for use by powered model, sailplane and helicopter pilots who demand a quality product. The RD6000 is packed with all of the capabilities that the beginner as will as the more advanced modelers demand for all three types of flying. It has the features available to get the most out of any type of model.

BASIC Program Features for all types of models (BASIC turned ON)

4 Model Memory
Stop Watch
Digital Trims
Servo Reversing on all channels
Dual Rate on Elevator and Aileron Channels (Plus Rudder on Heli)
Large Screen Liquid Crystal Display (LCD)
End Point Adjustment on all channels
Model Type selection
Center Adjust on El, Al, TH, RU and P-F
Data Reset
LCD Transmitter Voltage Meter
High Capacity Sanyo Transmitter/Receiver NiCd Batteries
Adjustable Stick Tension and Length
Low Battery, High Throttle and Power Alarms

AIRCRAFT ADVANCED FEATURES (BASIC turned OFF)

All of the features listed under the Program with the BASIC turned ON are also included in this Advanced Features section.

PPM/FM, PCM/FM and PPM/FM Reverse Modulation
Exponential
Trim Memory
Trim Authority (STEP) For Digital Trims
Sub Trim
Model Naming (3 Letters)
Failsafe/Hold (PCM Rx only)
Receiver Battery Failsafe (PCM Rx only)
Low Battery Alarm
Integral System Timer
Data Copy
Flaperon Mix
Spoiron Mix
Elevon Mix
V-Tail Mix
Aileron Differential
Landing Differential
Crow
Dual Rate Alarm
Menu Options
Flap to Elevator Mix
Throttle to Elevator Mix
Rudder to Aileron Mix
Aileron to Rudder Mix
Rudder to Elevator Mix
Two Separate Compensation Mixers
Switch Reverse

ADVANCED HELICOPTER FEATURES (BASIC turned OFF) All of the features listed under the Program with the BASIC turned ON are included in this Advanced Features section.

High Point Throttle/Pitch Curve Adjust
3rd Point Throttle/Pitch Curve Adjust
2nd Point Throttle/Pitch Curve Adjust
1st Point Throttle/Pitch Curve Adjust
Low Point Throttle/Pitch Curve Adjust
Revolution Mix High Point
Revolution Mix Middle Point
Revolution Mix Low Point
Gyro
Dynamic Trim Memory
Throttle Hold
CCPM
Two Separate Compensation Mixers
Dual Rate Rudder
Exponential on El, Al, and Ru
End Point Adjustments on El, Al, Th and Ru
Trim Authority
Trim Memory
Model Naming (3 Letters)
Integral Timer
Switch Reverse
Data Copy
PPM/FM, PCM/FM and PPM/FM Reverse Modulation
Menu Options
Flight Mode Switch
Failsafe/Hold (PCM Rx only)
Battery Failsafe
Idle Up
Throttle Cut

ACADEMY OF MODEL AERONAUTICS

5151 East Memorial Drive
Muncie, Indiana 47302

The Academy of Model Aeronautics (AMA) is a national organization representing modelers in the United States. We urge you to examine the benefits of membership, including liability protection in the event of certain injuries. The Academy has adopted simple and sane rules which are especially pertinent for radio controlled flight as the OFFICIAL AMA NATIONAL MODEL AIRCRAFT SAFETY CODE, which we have partially reprinted below:

1. I will not fly my model aircraft in sanctioned events, airshows or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.
2. I will not fly my model higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give the right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.
3. Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless and/or dangerous manner.
4. I will have completed a successful radio equipment ground range check before the first flight of a new or repaired model.
5. I will not fly my model aircraft in the presence of spectators until I become a qualified flyer, unless assisted by and experienced helper.
6. I will perform my initial turn after take off away from the pit or spectator areas, unless beyond my control.
7. I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission. (See chart below) Only properly licensed amateurs are authorized to operate equipment on amateur band frequencies.

72 MHz BAND

CH #	Freq.	CH #	Freq.	CH #	Freq.	CH #	Freq.	CH #	Freq.
11	72.010	21	72.210	31	72.410	41	72.610	51	72.810
12	72.030	22	72.230	32	72.430	42	72.630	52	72.830
13	72.050	23	72.250	33	72.450	43	72.650	53	72.850
14	72.070	24	72.270	34	72.470	44	72.670	54	72.870
15	72.090	25	72.290	35	72.490	45	72.690	55	72.890
16	72.110	26	72.310	36	72.510	46	72.710	56	72.910
17	72.130	27	72.330	37	72.530	47	72.730	57	72.930
18	72.150	28	72.350	38	72.550	48	72.750	58	72.950
19	72.170	29	72.370	39	72.570	49	72.770	59	72.970
20	72.190	30	72.390	40	72.590	50	72.790	60	72.990

INITIAL PREPARATION

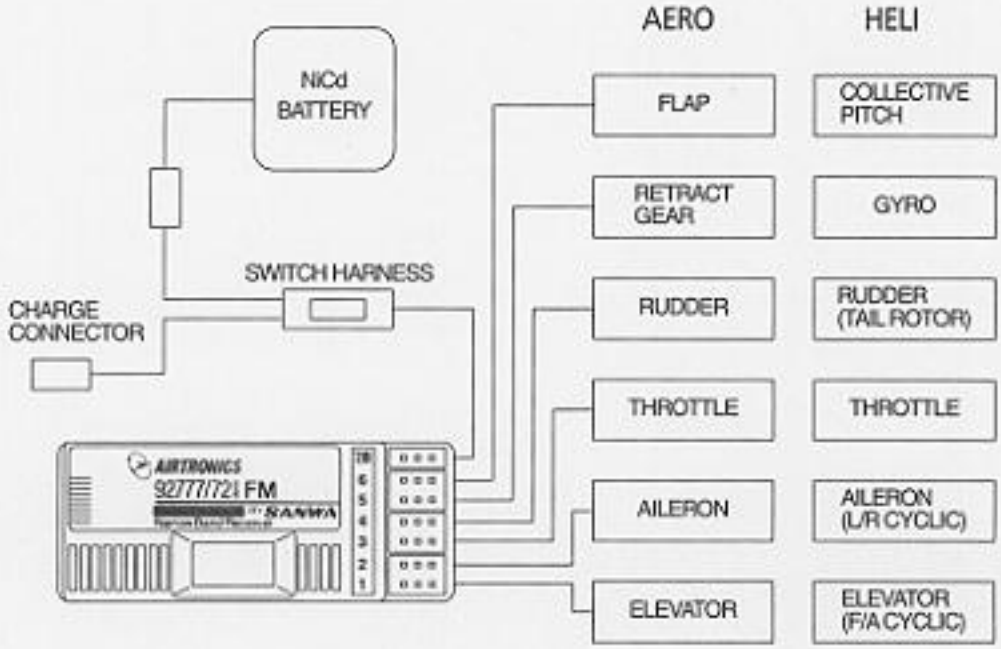
PACKAGING:

The packaging of your Airtronics RD6000 Radio Control System has been especially designed for the safe transportation and storage of the radio's components. After unpacking your radio, DO NOT DISCARD THE CONTAINERS! You should set the packaging aside for use if you ever need to send your radio in for service, or to store your radio in case you do not plan to use it for an extended period of time.

NiCd BATTERY CHARGING:

The first thing you should do after unpacking you RD6000 system is to charge the transmitter and receiver NiCd batteries. You should charge the transmitter and receiver NiCd batteries for 24 hours. Subsequent recharges should require only a 12 hour charge.

AIRBORNE SYSTEM CONNECTIONS



The above diagram show how to connect the components of your RD6000 system together. At this point, your objective is to get the system operating on your workbench. Once connected, you must then refer to the corresponding diagram for your system, i.e., either AERO or HELI showing the transmitter control sticks' function.

SPECIAL NOTE: If you change modulation from PPM/FM to PCM, Channel #1 and Channel #3 outputs are changed as per the following table.

MODULATION	CHANNEL # 1	CHANNEL # 3
PPM/FM	Elevator	Throttle
PPM/FM-REV	Elevator	Throttle
PCM/FM-1	Throttle	Elevator
PCM/FM-2	Throttle	Elevator

PPM/FM will operate RD6000 p/n 92777 FM receiver.PPM/FM-REV will operate other brand PPM type receivers. (Note that channel outputs for OTHER BRAND receivers may not be the same as indicated on the above diagram).
PCM/FM-1 will operate the STYLUS p/n 92185 PCM receiver.
PCM/FM-2 will operate the INFINITY 660 and VANGUARD p/n 92065 receivers.

AIRBORNE COMPONENTS

While your systemis batteries are charging, you can familiarize yourself with the airborne portion of your radio. The airborne portion of the radio refers to any components which are mounted in your plane or helicopter and carried aloft when you fly. The airborne components consist of the receiver, which receives the signals from the transmitter, decodes them, and relays the commands to the servos; the servos, which are simply electronically fi controlled motors used to move the controls of the plane; the NiCd battery pack, which provides power for the receiver and servos to operate; and the switch harness which allows you to turn the airborne package on and off.

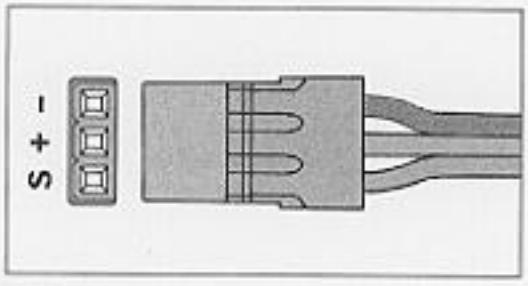
PCM RECEIVER LOW VOLTAGE ALARM

The PCM receiver for the RD6000 has the ability to warn you when the airborne battery pack voltage drops below 4.1 volts. When the airborne battery arrives at this voltage, the throttle servo will move to a reduced throttle position for 0.5 seconds, then return to normal. This cycling of the throttle will occur about once each minute until you land and recharge the NiCd battery pack. IT IS RECOMMENDED THAT YOU LAND IMMEDIATELY if the receiver failsafe warns you of low voltage conditions! If you wish to disable the Low Voltage Alarm, you can do so by Inhibiting the B-F-S Function in the Advanced portion of the RD6000 transmitters program.

CONNECTORS

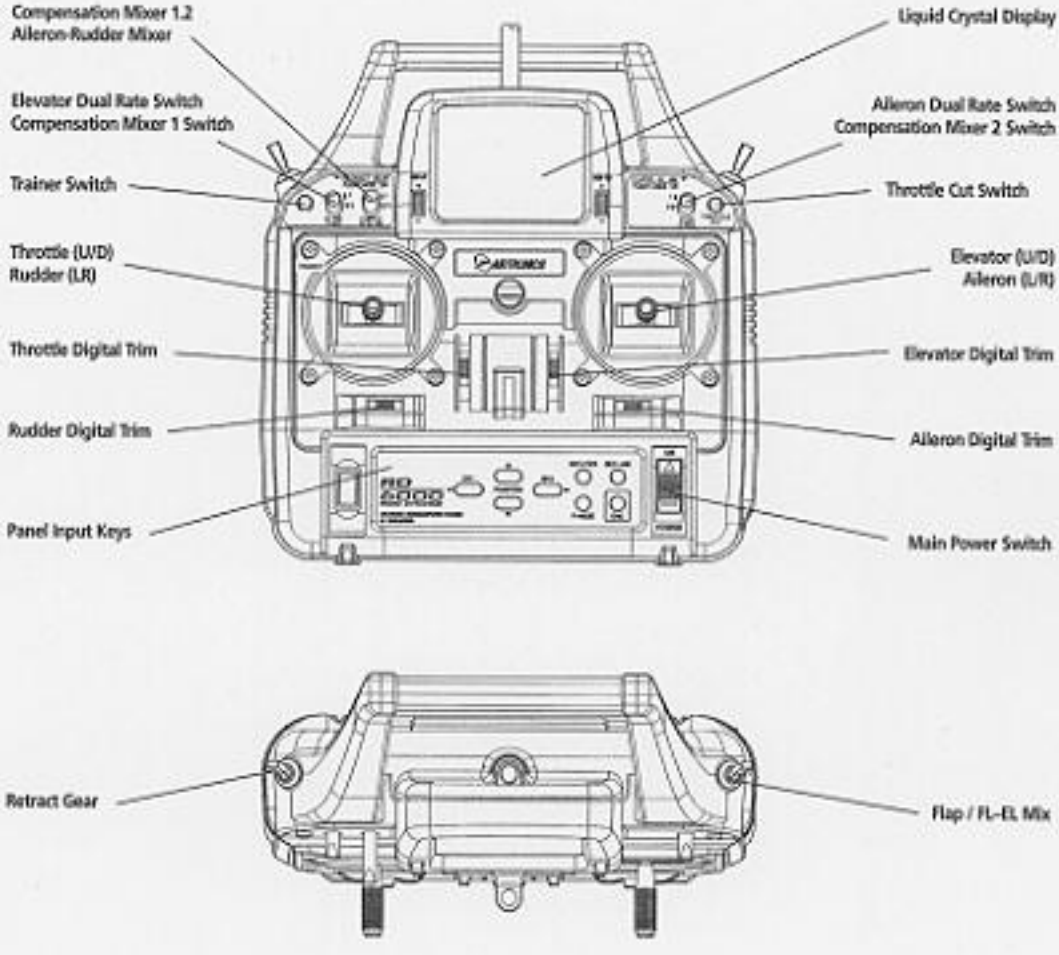
Your RD6000 unit is equipped the new universal AIRTRONICS "Z" connectors which are color coded blue, and are electrically compatible with the receivers of other radio control system manufactures. The connectors are rugged but should be handled with care. Note that these connectors are not compatible with older AIRTRONICS R/C equipment unless Adapter p/n 99399Z is used!

"Z" CONNECTOR



AUDIO LOW VOLTAGE ALARM

Your RD6000 transmitter is equipped with an Audio Alarm which will sound whenever the transmitter batteries drop below 9.5 volts during transmitter operation. If the alarm sounds while you are flying, land immediately and don't operate the transmitter until it has been charged for 12 hours. The transmitter should normally operate 120 to 150 minutes before the alarm sounds. If the alarm sounds even after the batteries have been on charge for the required time it indicates that there is a problem with either the battery pack or the transmitter, and you should contact AIRTRONICS about service.



92777 RECEIVER CHANNEL ASSIGNMENTS	
Receiver Plug Number	Plug In Servo For:
1	Elevator
2	Aileron
3	Throttle
4	Rudder
5	Gear
6	Flap or 2nd Aileron Servo
7/B	Battery

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Get The Advantage

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