INSTRUCTION MANUAL FOR AIRPLANE AND HELICOPTER

XP7202

7-CHANNEL COMPUTER RADIO SYSTEM

Table of Contents

Table of Contents

Section 1: Using This Manual

For your convenience, this manual is arranged with separate sections for airplane and helicopter software functions: Airplane Programming: Pages 25 through 65 Helicopter Programming: Pages 66 through 102 Programming functions are discussed in the same order that they appear on the radio. An explanation of the use and purpose of each feature is provided, followed by an illustration of its LCD display. In the front of this manual you will find the specifications for the transmitter and its included accessories. In addition, guidelines for installation have been included. A blank data sheet has been included at the end of each section. Once all data has been input for a particular model, it is highly recommended that you also record it on a copy of the data sheet provided. If you want to make changes to the current settings, this step will save you a great deal of time.

XP7202 Transmitter

The XP7202 synthesized transmitter allows onscreen channel selection of channels 15 through channel 60 via the computer. The system prevents accidental turn-ons by requiring acknowledgement of the selected channel before a signal is transmitted. The system incorporates a hi-resolution dot matrix LCD display offering sophisticated graphics that are easy to read and understand. Two-model type programming offers airplane and helicopter pilots programming options that will meet the most demanding modelers' needs. Control sticks are adjustable for spring tension and length. Twenty-model memory storage capacity allows programming for up to twenty separate helicopters or airplanes or you can program more than one setup for a single aircraft. Two versions of the transmitter are available: Airplane and Helicopter. The switch positions are optimized for each model type, however, the programming is identical in both versions.

R790 ScanSelect PCM Receiver

The R790 ScanSelect™ is a high-performance synthesized, single-conversion receiver with 10KHz super narrow band ABC&W circuitry.

The ScanSelect synthesized frequency selections system allows access to the user of channels 15–60 without changing any crystals.

A narrow band ceramic filter for high-signal selectivity assists in rejecting cross-modulations from other common radio frequencies, such as RC transmitters or local paging systems.

This receiver features Direct Servo Control (DSC) for control of servos without radio frequency output.

The receiver has low current consumption.

The R790's Slimline design allows it to fit into most model applications.

DS821 Servo

The DS821 sport digital servo features:

- Ball bearing outshaft support
- A zero deadband amplifier
- New improved plastic gear material
- Improved accuracy and higher holding torque, characteristic of digital servos
- Low current drain
- 3-pole ferrite cored motor

Section 2: Component Specifications

System Specifications

Type	Aircraft	Helicopter
System Name	XP-7202A	XP-7202H
Transmitter Body	NET-K237US	NET-K237US
Receiver	NER-790	NER-790
Charger	AD35M05	AD35M05
Airborne Battery	1100mAh	1100mAh
Servos	NES-821x4	NES-821x4

Included Accessories

	Standard Switch	Standard Switch
	12” Aileron Ext.	12” Aileron Ext.
	Charge Jack	Charge Jack
	Servo Accessories	Servo Accessories
	Hex Wrench	Hex Wrench
	Instruction Manual	Instruction Manual

Transmitter Specifications

Type	Aircraft	Helicopter
Model Number	NET-G127US	NET-G127US
Encoder	7-Channel Computer System	7-Channel Computer System
RF Module	72MHz	72MHz
Modulation	PCM (S or Z) or PPM	PCM (S or Z) or PPM
Output Power	Approximately 750mW	Approximately 750mW
Current Drain	200mA (70mA w/DSC)	200mA (70mA w/DSC)
Power Source	1.2Vx8 Ni-MH (9.6V) 1500mAh	1.2Vx8 Ni-MH (9.6V) 1500mAh
Output Pulse	1000–2000 (1500 Neutral)	1000–2000 (1500 Neutral)

Servo Specifications

Type	DS821
Torque (oz/in)	72.0
Speed (sec/60 deg)	.19
Weight (oz)	1.50
Size (in) (L x W x H)	1.50 x 0.74 x 1.47
BB	Single
Motor	3-pole ferrite

Receiver Specifications

Type	PCM
Model Number	NER-790
Type	S-PCM 7-channel ABC&W / micro
Frequency	72MHz
Sensitivity (Microseconds)	5µS minimum
Selectivity	8KHz/5dB
Weight (oz)	1.5
Receiver Antenna	39" for all aircraft frequencies

Charger Specifications

Type	Aircraft	Helicopter
Model Number	AD35M05	AD35M05
Input Voltage	AC 100–120V	AC 100–120V
Output Current	110mA Rx 110mA Tx	110mA Rx 110mA Tx
Charging Time	15 hours	15 hours

Airborne Battery Pack

Type	Aircraft	Helicopter
Model Number	B1100mAh	B1100mAh
Voltage	4.8V	4.8V
Size (in) (W x L x H)	2.24 x 0.63 x 1.70	2.24 x 0.63 x 1.70
Weight (oz)	4.9	4.9

Section 3: Battery Charging

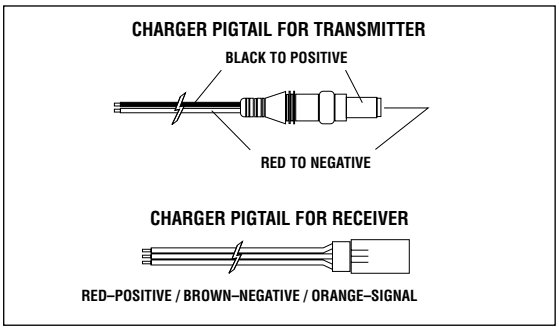
Transmitter/Receiver

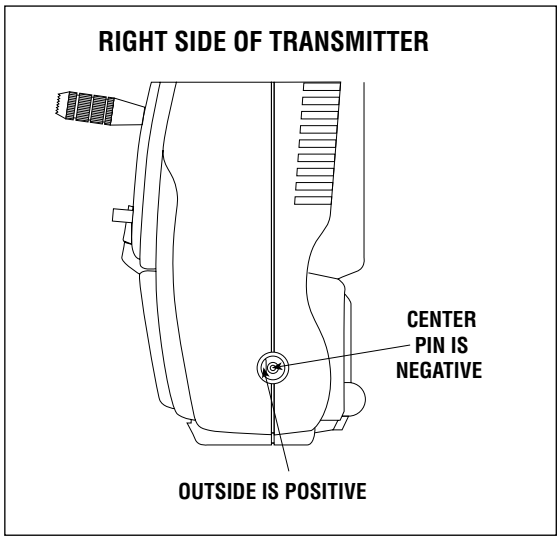
NOTE: It is imperative that you fully charge both the transmitter and the receiver battery packs prior to each flying session. To do so, using the included wall charger, leave the charger and batteries connected overnight (16 hours). The first charge should be approximately 20–24 hours in order to fully charge both battery packs to peak capacity.

The charger supplied with this system is designed to recharge your batteries at a rate of 110mA for the transmitter and 110mA for the receiver battery pack.

Transmitter Polarity

The center pin on all JR® transmitters is negative. Therefore, the center pin on all JR chargers is negative, not positive. This is different from many other manufacturers' chargers and radio systems. Beware of improper connections based on "color coded" wire leads, as they may not apply in this instance. You must make sure that the center pin of your JR transmitter is always connected to the negative voltage for correct polarity hookup.





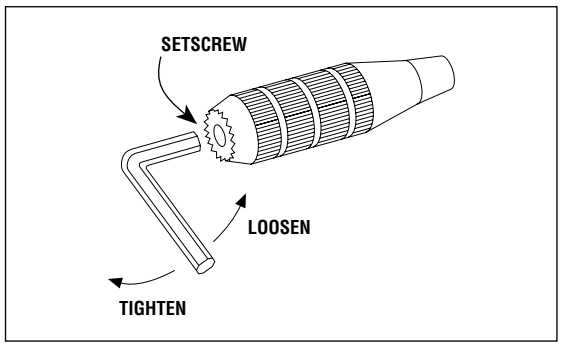
Charger

The pilot lamps should always be ON during the charging operation. If they're not, check to make sure that both the transmitter and receiver are switched OFF. Do not use this charger for equipment other than JR. The charging plug polarity may not be the same and equipment damage can result. During the charging operation, the charger's temperature is slightly elevated. This is normal.

Section 4: General Information

Control Stick Length Adjustment

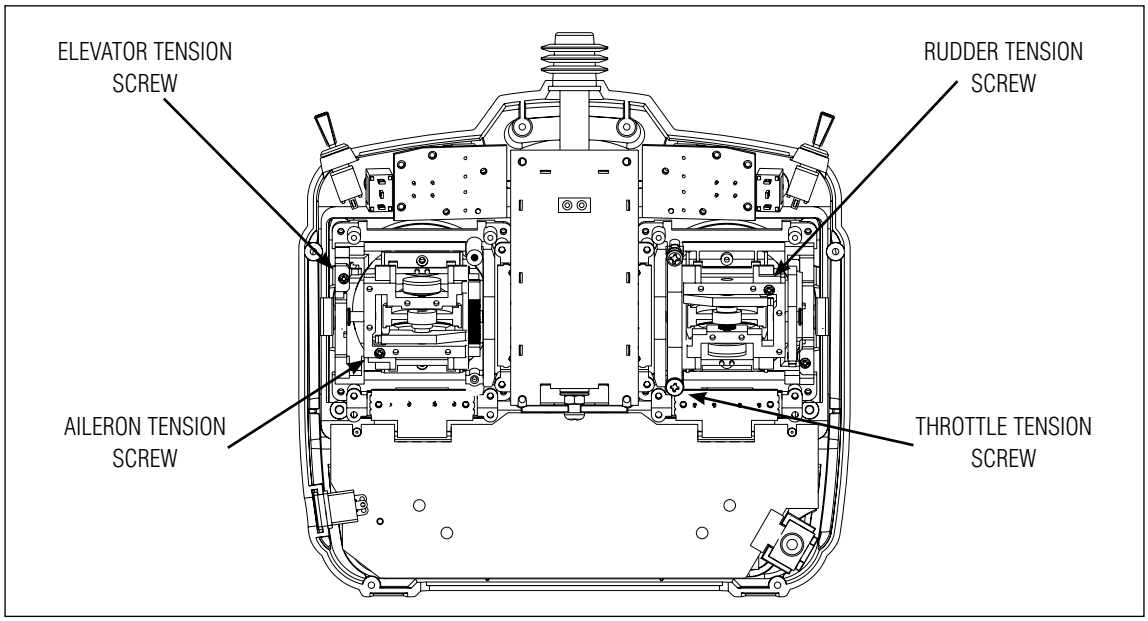
The XP7202 allows you to adjust the control stick's length. Loosen or tighten to adjust the stick length; use the 2mm Allen wrench (supplied with your XP7202 transmitter) to unlock the setscrew. Turn the wrench counterclockwise to loosen the screw. Then, turn the stick clockwise to shorten or counterclockwise to lengthen. After the control stick length has been adjusted to suit your flying style, tighten the 2mm setscrew. If you desire longer sticks, JR® offers a longer stick tip (JRPA047) that is approximately one inch longer than the standard stick. This stick is available from your local JR dealer.



Control Stick Tension Adjustment

NOTE: Remove the transmitter Ni-MH battery, and six (6) transmitter back cover screws as shown on the previous page. Remove the transmitter back, being careful not to cause damage to any components

Adjust each stick tension screw for the desired tension (counterclockwise to loosen stick feel, clockwise to tighten stick feel).



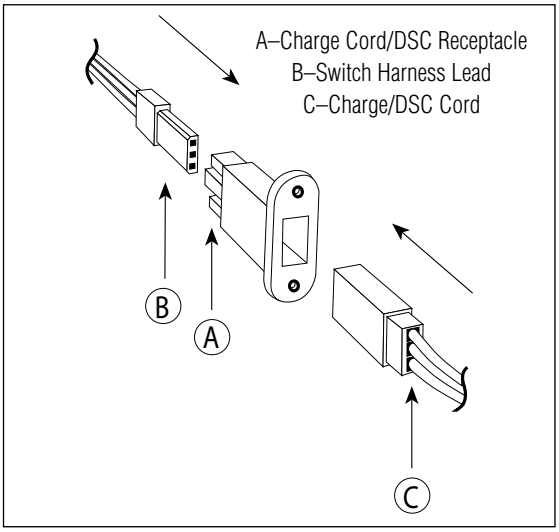
Proper Direct Servo Connect Hookup and Operation

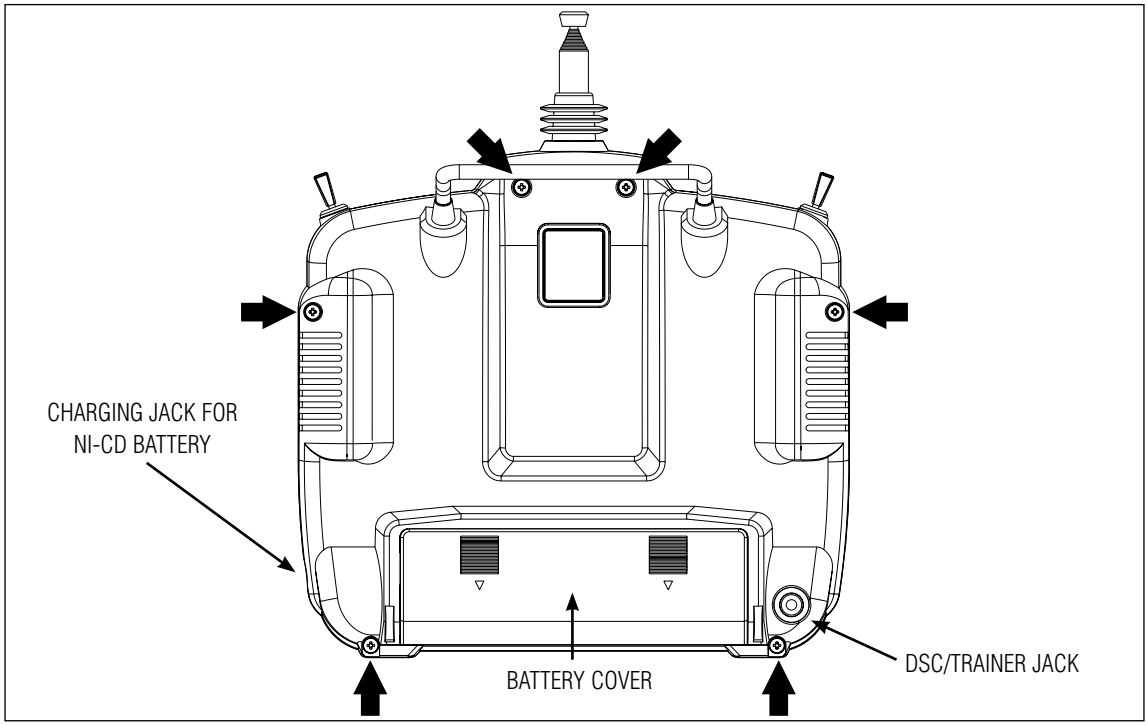
1. Leave the transmitter power switch in the OFF position. The transmitter will not transmit radio frequency (RF) in this position.
2. Plug the DSC cord (optional JRPA132) into the DSC port in the rear of the transmitter.
3. The encoder section of the transmitter will now be operational and the LCD display will be lit.
4. Plug the other end of the DSC cord into the receiver charge receptacle. Turn the switch harness to the ON position.

NOTE: The DSC function will only operate with the JRPA001 Deluxe Switch Harness, or the JRPA004 Charge Switch. When you install the charging jack, be sure to hook the charging jack receptacle securely into the switch harness charge cord.

Why you should use the DSC function:

1. The DSC function allows you to make adjustments to your model without transmitting any radio signals. Therefore, if another pilot is flying on the same frequency, you can adjust your model's radio setting and not interfere with the other pilot's aircraft.
2. The DSC enables you to operate the control surfaces of your airplanes without drawing the fully operational 200mAh from your transmitter battery pack. Instead, you will only draw 70mA when using the DSC function. Note: Under no circumstances should you attempt to fly your airplane with the DSC cord plugged in.





CAUTION: THE BATTERY CONNECTOR
IS KEYED SO THAT IT CAN ONLY BE PLUGGED
IN ONE DIRECTION. DO NOT FORCE.

Neck Strap Adjustment

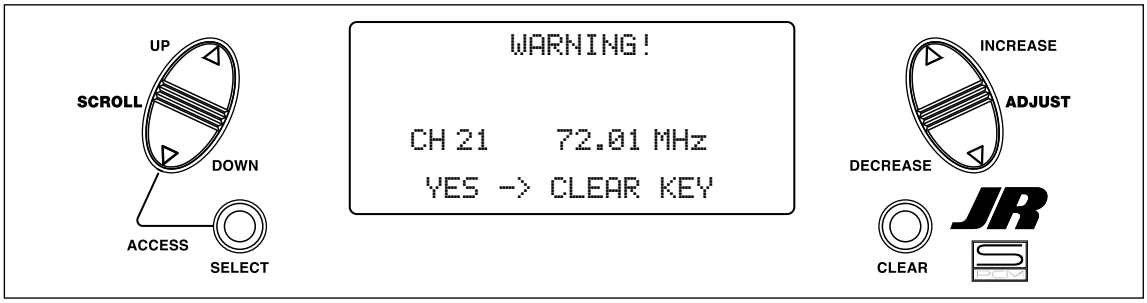
An eyelet is provided on the face of the XP7202 transmitter to attach the neckstrap.

NOTE: Double check to ensure that the neck strap (JRPA023) is securely fastened to the transmitter. This hook has been positioned so that your transmitter balances when you use the neck strap.

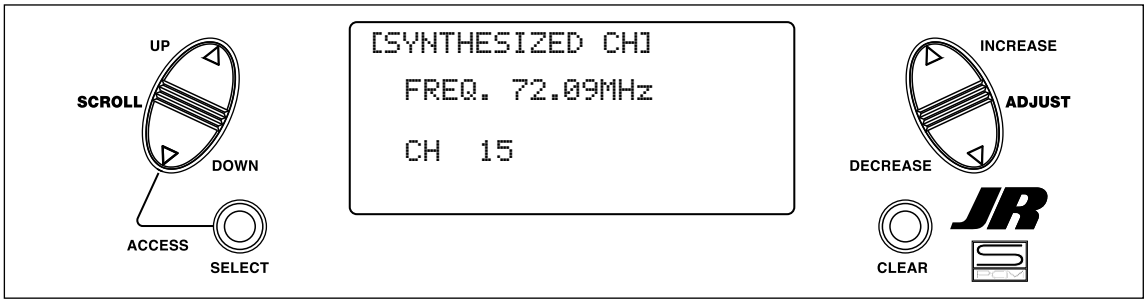
Base-Loaded Antenna

An optional base-loaded antenna is available for use with the XP7202 transmitter. It is considerably shorter than the standard antenna. The Base-Loaded Antenna (JRPA155) is made of a flexible coil and is covered with soft plastic material. Your range will not be affected when using the based-loaded antenna.

Using the Synthesized Channel Selection



The XP7202 allows the selection of channels 15 through 60 via the onscreen programming. When the transmitter is first turned on, the screen will display "WARNING!" and the current channel and frequency used will be displayed. At this time no signal is being transmitted. If you wish to transmit on this frequency, press the clear key and the transmitter will begin transmitting on the selected channel displayed and the screen will display the main menu.



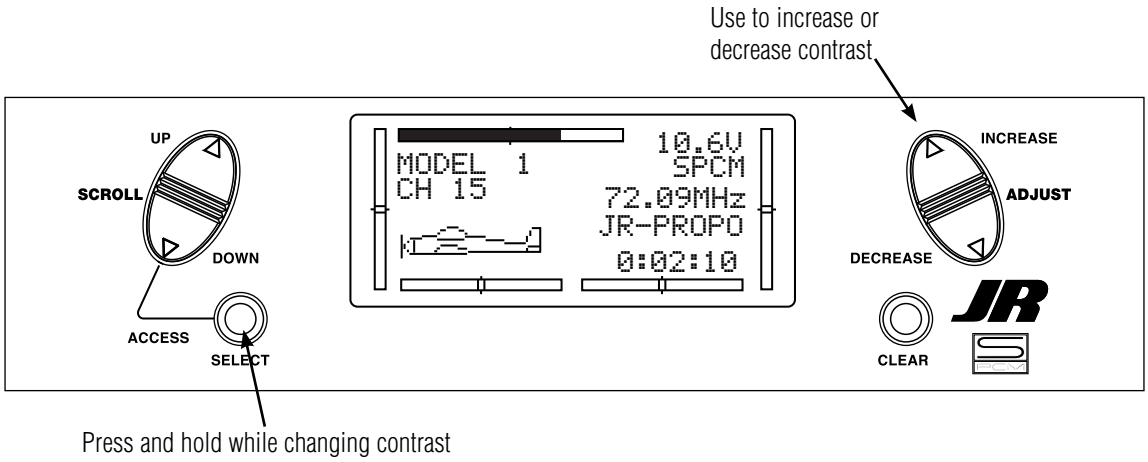
Changing the Frequency:

- Enter the system set up mode by pressing and holding the *DOWN* and *SELECT* keys simultaneously while turning on the power switch.
- Press the *UP* or *DOWN* key until **SYNTHESIZED CH** appears on screen as shown.
- Press the *INCREASE* or *DECREASE* key to select the desired channel.
- Press the *DOWN* and *SELECT* key to exit the synthesized screen. This will return the screen to the warning menu.
- In the warning menu, the newly selected channel will be displayed. If you wish to transmit on that channel, press the *CLEAR* key and the transmitter will transmit and the screen will switch to the main menu screen.

The XP7202 can transmit in either Pulse Code Modulation (S-PCM and Z-PCM) or in Pulse Position Modulation (PPM, commonly referred to as FM). Be certain to observe the following guideline: Do not operate your transmitter when another transmitter is using the same frequency, regardless of whether the second transmitter is PCM, PPM (FM) or AM. **You can never operate two transmitters on the same frequency simultaneously without causing interference to both receivers.** See Page 40 (aircraft) or Page 77 (helicopter) for more details about selecting the modulation type.

Screen Contrast

The screen contrast is adjustable, allowing the user to vary the contrast for improved clarity in all conditions. To adjust contrast: With the transmitter on, in the main menu press and hold the *SELECT* key. Then pressing the *INCREASE* or *DECREASE* key will lighten or darken the contrast.



Advanced Digital Trims

The XP7202 employs digital trim levers on aileron, elevator, throttle, and rudder. (Hover pitch and hover throttle for helicopters). The ADT (Advanced Digital Trim) feature is designed to automatically store the selected trim values for each model. When a different model is selected, the previously stored trim positions for the selected model are automatically recalled. When using the helicopter program each flight mode has its own trim that is automatically recalled each time that flight mode is entered.

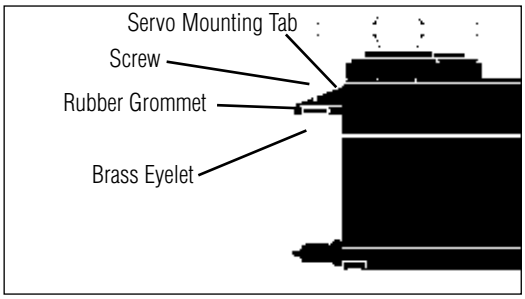
Visual trim positions are displayed on the main screen. The trims also feature dual speed scrolling. Holding the

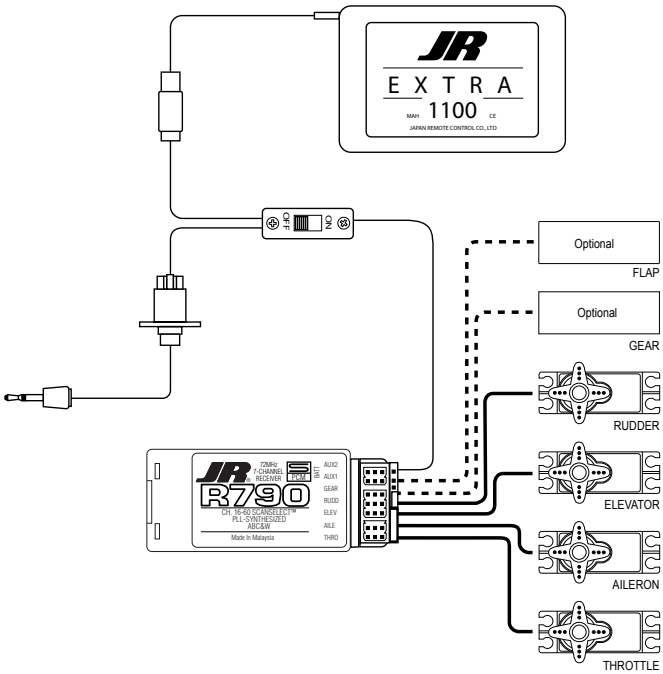
trim lever for an extended time will cause the trim rate of change to increase.

Installation Requirements

It is extremely important that your radio system be correctly installed in your model. Here are a few suggestions for installing your JR® equipment:

1. Wrap the receiver in protective foam rubber that is no less than 3/8-inch thick. Secure the foam to the receiver with #64 rubber bands. This protects the receiver from shock in the event of a crash or a very hard landing.
2. Mount the receiver antenna firmly to the airplane to ensure that it will not become entangled in the propeller or control surfaces.
3. The servos should be mounted using rubber grommets and brass bushings to isolate them from vibration. Do not over-tighten the mounting screws; this will negate the vibration absorption effect of the rubber grommets. The diagram below will assist you in properly mounting your servo. The brass bushings are pushed from the bottom up in the rubber grommets. When the servo screw is tightened securely, it provides the proper security, as well as the proper vibration isolation, for your servo.
4. The servos must be able to move freely over their entire range of travel. Make sure that the control linkages do not bind or impede the movement of any of the servos.
5. Mount all switches away from the engine exhaust and away from any high vibration areas. Make sure each switch operates freely and is able to operate over its full travel.

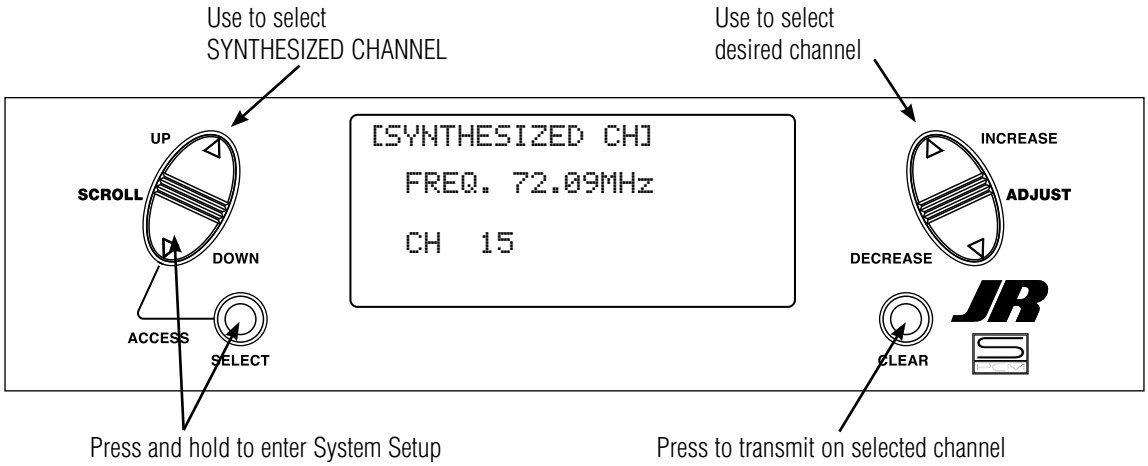




Section 5: Quick Start

Selecting a Channel

NOTE: Before operation, it is necessary to select the desired channel.



To Select a Channel (Transmitter)

Press and hold the *DOWN* and *SELECT* key simultaneously while turning on the transmitter to enter system set up mode.

Press the *UP* or *DOWN* key until **SYNTHESIZED CH** appears on screen.

Press the *INCREASE* or *DECREASE* key to select the desired channel.

Press the *DOWN* and *SELECT* keys simultaneously to return to the **WARNING** screen.

To transmit on the selected channel displayed in the warning screen, press the *CLEAR* key. The screen will change to the main screen and the transmitter will emit a signal on the selected channel.

NOTE: When turning on the transmitter, the warning screen is displayed with the previously selected channel. No signal is being transmitted. To accept this displayed channel, press the *CLEAR* key. A signal will then be transmitted on the selected channel.

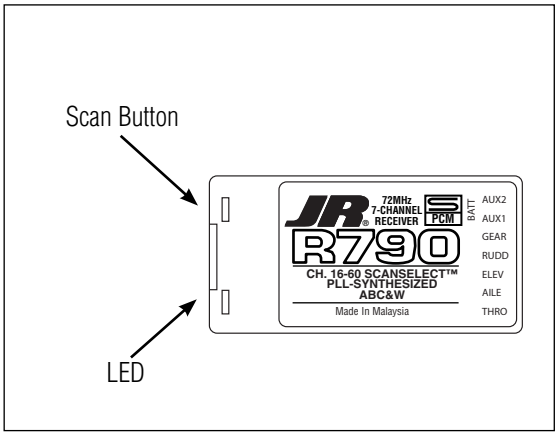
To Select a Channel (Receiver)

Turn the transmitter's power switch on and press the clear key to begin transmitting on the selected channel.

Turn on the power to the receiver. The LED will light.

Depress the *SCAN* button until the LED turns off then release the button. The LED will remain off for approximately 3 seconds.

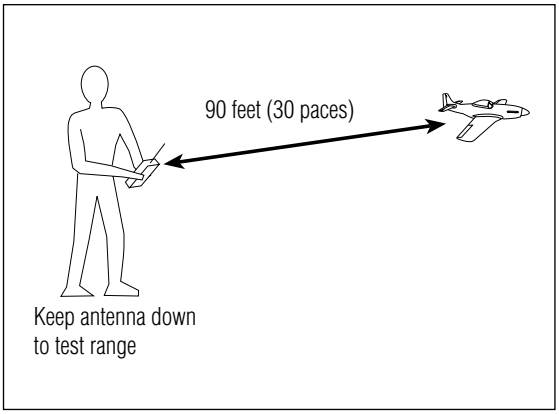
While the LED is still off, depress and release the *SCAN* button again. The receiver's LED will flash for a short period while the receiver scans for the strongest signal. When the receiver has locked onto the frequency, the receiver's LED will be on, indicating the receiver is ready for operation.



Performing a Range Test

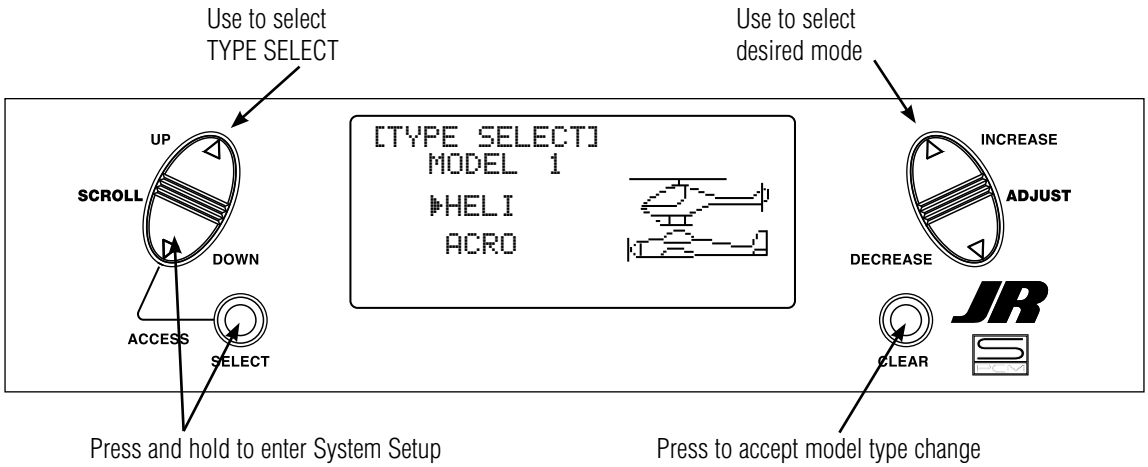
Always perform a range check before each day's flying session or after selecting a different channel. The range check should be as follows:

- Do not extend the transmitter antenna at this time. Turn the transmitter "on."
- Press the *CLEAR* key to begin transmitting.
- Turn the model "on."
- Slowly walk away from the model while moving the control surfaces. The aircraft should function properly at a distance of 90 feet (30 paces.)
- For PCM Only: With the throttle fail-safe preset to idle, bring the throttle slightly above idle. Walk away until the throttle drops to idle. This will be the distance of the range check.



Section 5.1: Airplane Quick Start

The following covers a basic 4-channel airplane with a single rate. For more details on programming for the aircraft mode, see the Aircraft section of this manual.



Model Type Selection

Selecting Airplane Mode

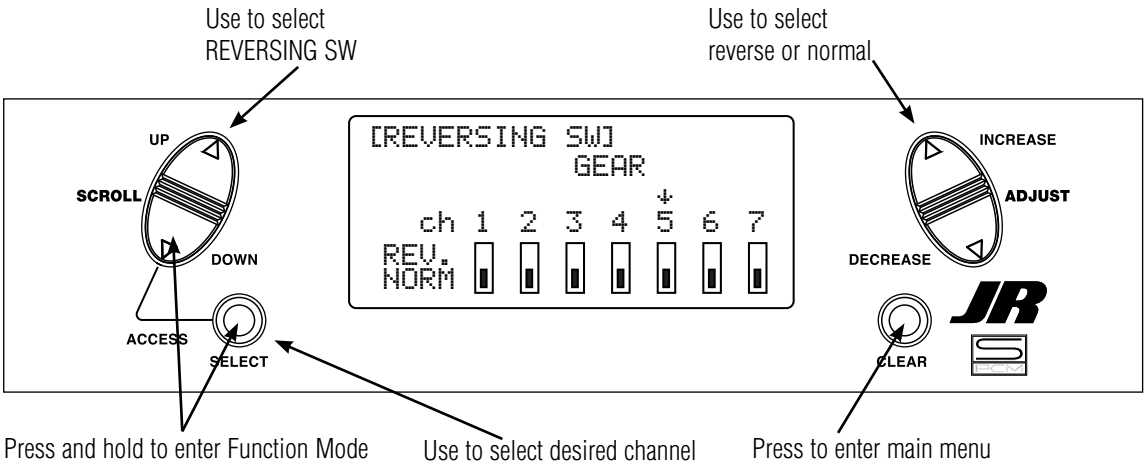
Press the *DOWN* and *SELECT* keys simultaneously and hold while turning on the transmitter to enter system set up mode.

Press the *UP* or *DOWN* button until **TYPE SELECT** appears on screen.

If **ACRO** is highlighted on screen, proceed to Servo Reversing

If **HELI** is highlighted, press the *INCREASE* or

DECREASE key once and **ACRO** should be highlighted.



Press the *CLEAR* key to accept the model type change.

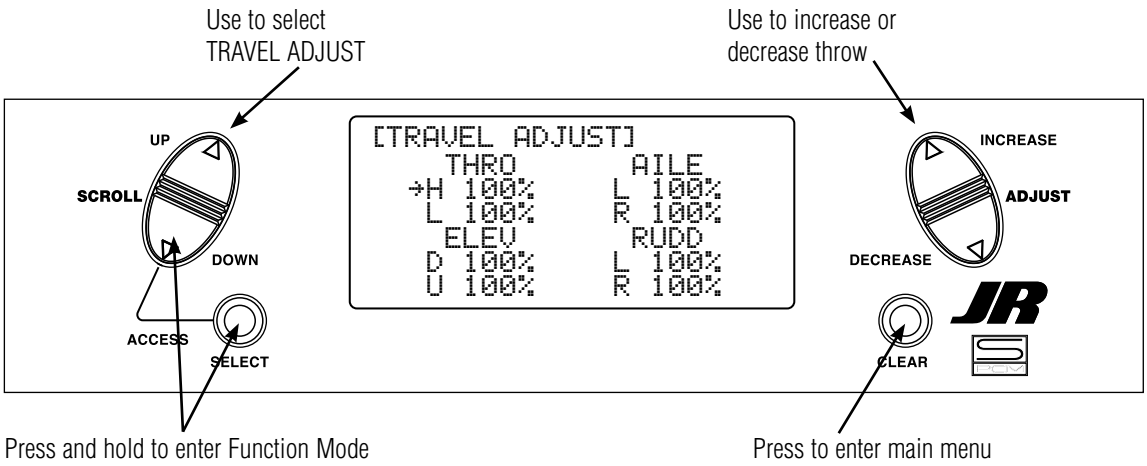
Servo Reversing

Turn the power on and the transmitter will display the WARNING screen. Press the *CLEAR* key to enter the main menu.

With the power on, press the *DOWN* and *SELECT* keys simultaneously to enter the function mode.

Press the *UP* or *DOWN* key until **REVERSING SW** appears on screen.

Press the *SELECT* key to select the desired channel then press the *INCREASE* or *DECREASE* key to select reverse or normal servo direction.



Travel Adjust

With the power off, turn the transmitter on then press the *CLEAR* key to enter the main menu.

Press the *DOWN* and *SELECT* keys simultaneously to enter the function mode.

Press the *UP* or *DOWN* key until **TRAVEL ADJUST** appears on screen. Press the *SELECT* key to move the cursor arrow to the desired channel.

Use the *SELECT* key to choose the appropriate channel that you wish to adjust.

Press the *INCREASE* or *DECREASE* key to increase or decrease the servo throws in each direction. While holding the channel or switch in the desired direction press the *INCREASE* or *DECREASE* key to adjust the travel adjust in that direction.

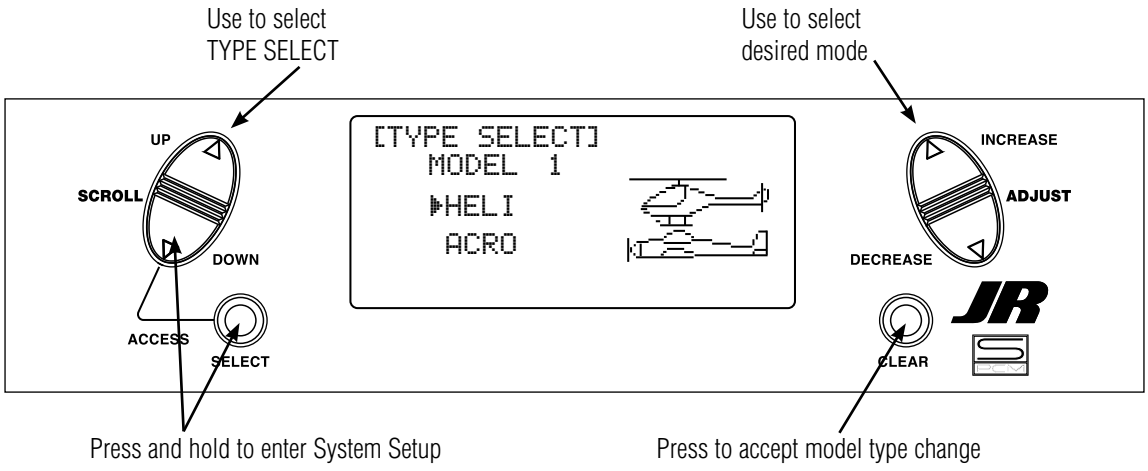
This completes the basic Quick Start setup for your airplane. For additional features like Dual and Expo rates, Mixing, etc, see the appropriate pages listed in the table of contents.

> **NOTE**: If your airplane's ailerons are controlled independently by two servos, see "Wing Type

Selection" on Page 46 for specifics on programming flaperons.

Section 5.2: Helicopter Quick Start

The following covers a basic 5-channel mechanical mix helicopter with single rate. For more details on programming for the helicopter mode see the Helicopter section of this manual.



Model Type Selection

Selecting Helicopter Mode

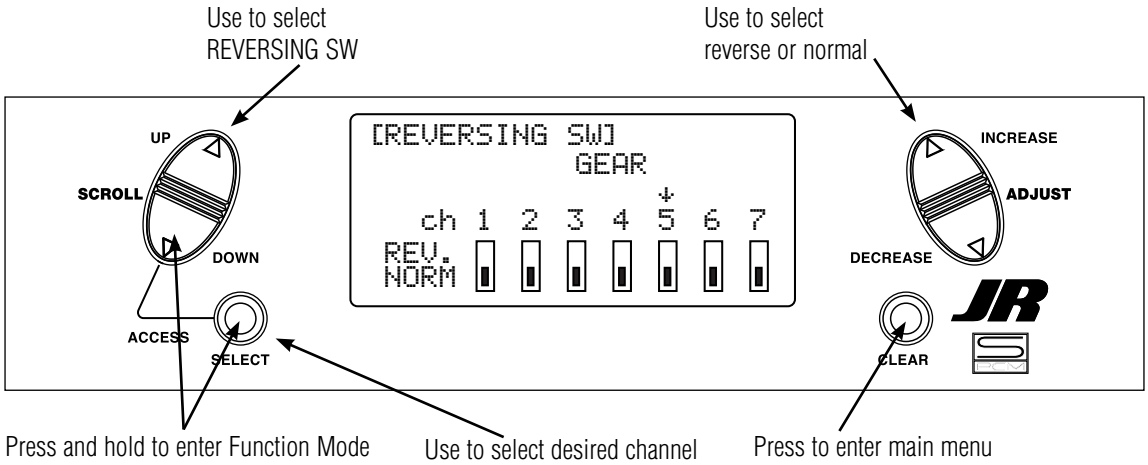
Press the *DOWN* and *SELECT* keys simultaneously and hold while turning on the transmitter to enter system set up mode.

Press the *UP* or *DOWN* button until **TYPE SELECT** appears on screen.

If **HELI** is highlighted on screen, proceed to Servo Reversing.

If **ACRO** is highlighted, press the *INCREASE* or

DECREASE key once and **HELI** should be highlighted.



Press the *CLEAR* key to accept the model type change.

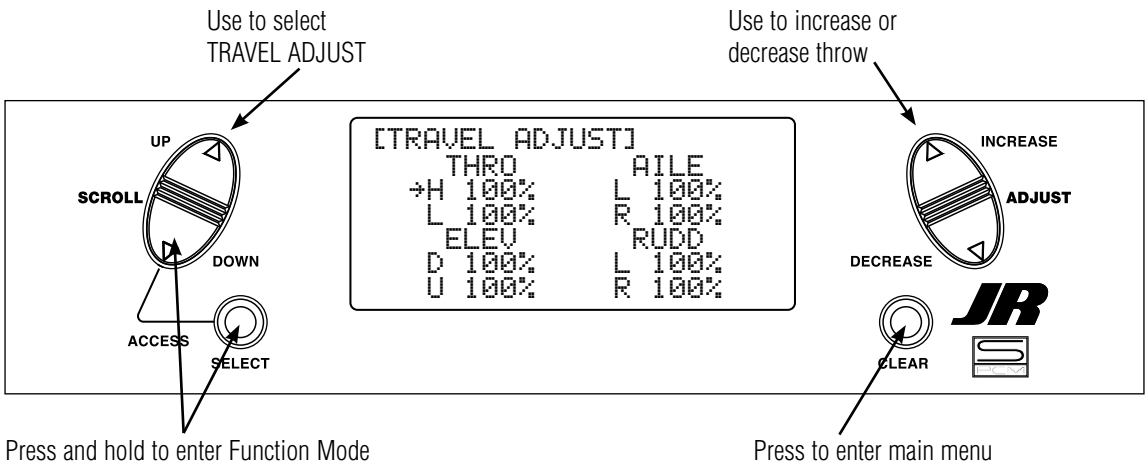
Servo Reversing

Turn the power on and the transmitter will display the WARNING screen. Press the *CLEAR* key to enter the main menu.

Press the *DOWN* and *SELECT* keys simultaneously to enter the function mode.

Press the *UP* or *DOWN* key until **REVERSING SW**

appears on screen.



Press the *SELECT* key to select the desired channel then press the *INCREASE* or *DECREASE* key to select reverse or normal servo direction.

Travel Adjust

With the power off, turn the transmitter on then press the *CLEAR* key to enter the main menu.

Press the *DOWN* and *SELECT* keys simultaneously to enter the function mode.

Press the *UP* or *DOWN* key until **TRAVEL ADJUST**

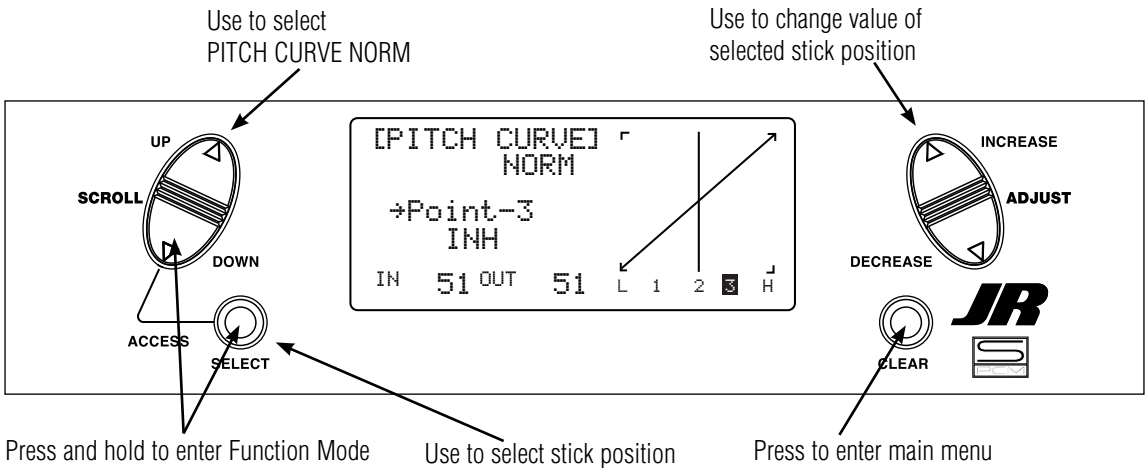
appears on screen.

Press the *SELECT* key to select the desired channel then press the *INCREASE* or *DECREASE* key while holding the stick or switch in the desired direction that you wish to adjust the servo travel.

Pitch Curve

Adjusting the Normal Pitch Curve

The XP7202 offers four independent pitch curves each, with up to five adjustable points. This function allocates a separate pitch curve setting during normal, stunt 1, stunt 2 and hold modes to maximize flight performance. Once the pitch curves are adjusted, each can be activated in flight using the three-position flight mode and throttle hold switches. Each of the five points of the pitch curve



are independently adjustable from 0–100%. These five points correspond to low, 25%, mid, 75% and high stick positions. See Page 89 for more details on setting up pitch curves.

With the power off, turn the transmitter on then press the *CLEAR* key to enter the main menu.

Press the *DOWN* and *SELECT* keys simultaneously to enter the function mode.

Press the *UP* or *DOWN* key until **PITCH CURVE NORM** appears on screen.

Press the *SELECT* key to select the stick position that you wish to adjust the pitch.

L= Low

1= 25%

2= 50%

3= 75%

H= High

Press the *INCREASE* or *DECREASE* keys to adjust the pitch value of the selected pitch position.

Recommended Initial pitch settings

L= -4°

2= 5°

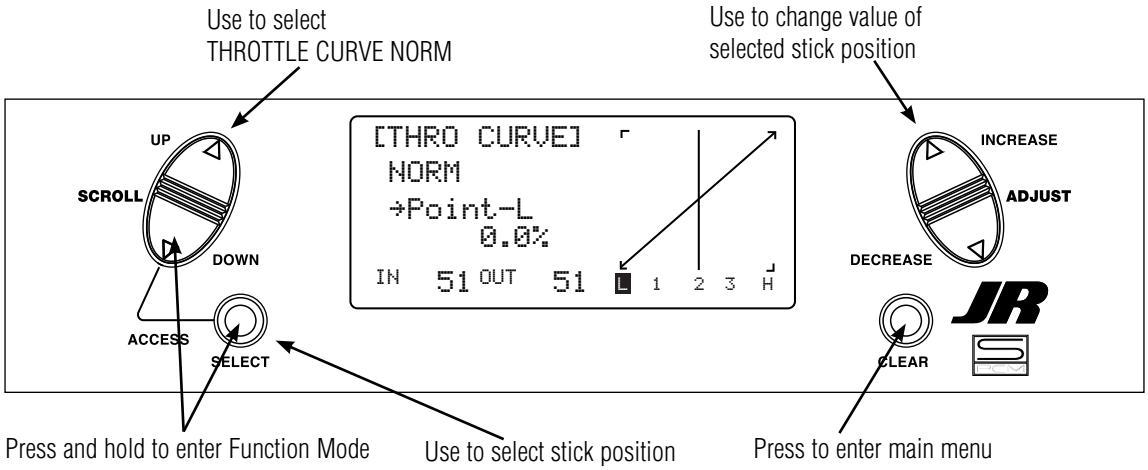
H= 9°

NOTE: For more information about setting up pitch curves, see Page 89.

Throttle Curve

Adjusting the Normal Throttle Curve

Adjustment of the throttle curves is similar to the pitch curve adjustment described on the preceding page. Three throttle curves are available: normal, stunt 1 and stunt 2. All throttle curves have five adjustable points—low, 25%,



50%, 75% and high. Flight modes are located on the 3-position flight mode switch. The throttle curve is in the normal mode when the Flight Mode switch is in the rear position and the Throttle Hold switch is rearward.

With the power off, turn the transmitter on then press the *CLEAR* key to enter the main menu.

Press the *DOWN* and *SELECT* keys simultaneously to enter the function mode.

Press the *UP* or *DOWN* key until **THROTTLE CURVE NORM** appears on screen.

Press the *SELECT* key to select the stick position that you wish to adjust the throttle.

L= Low

1= 25%

2= 50%

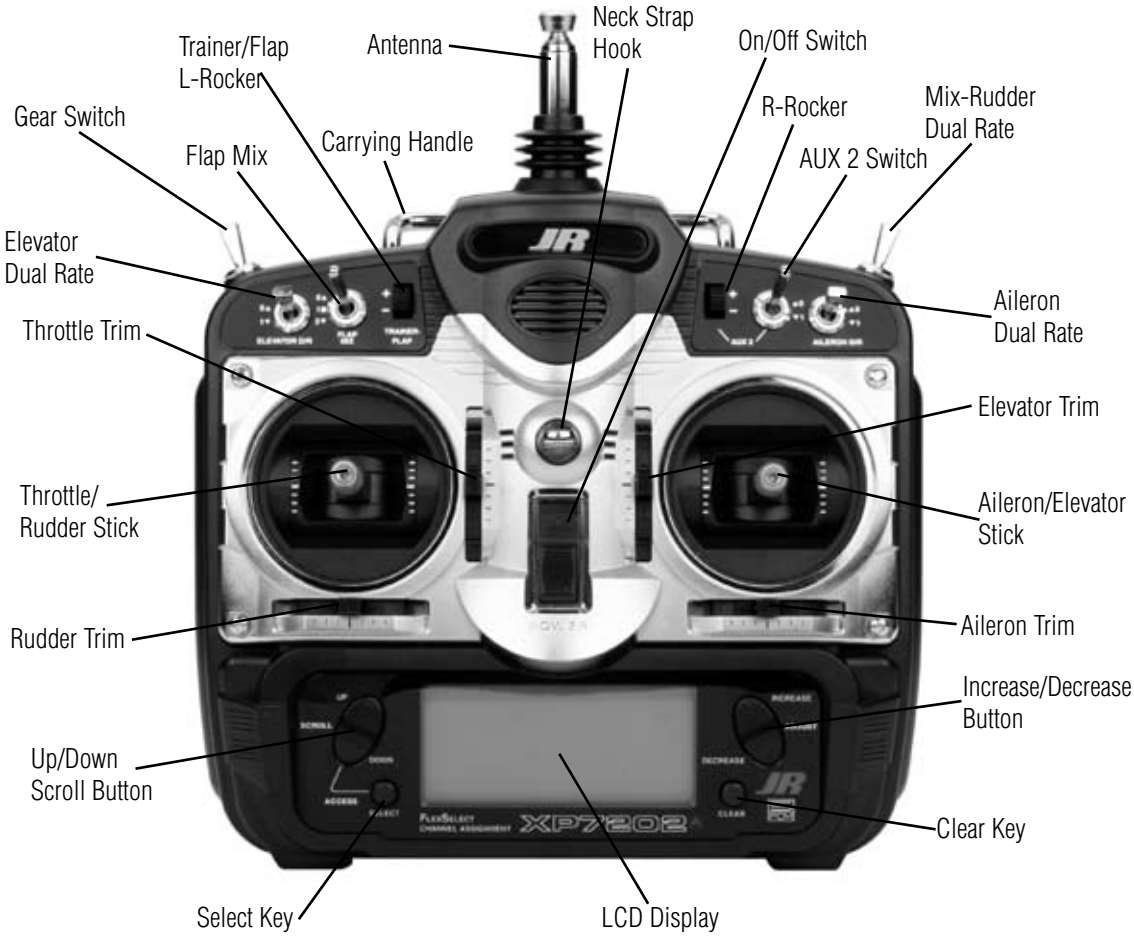
3= 75%

H= High

Press the *INCREASE* or *DECREASE* keys to adjust the throttle value of the selected throttle position.

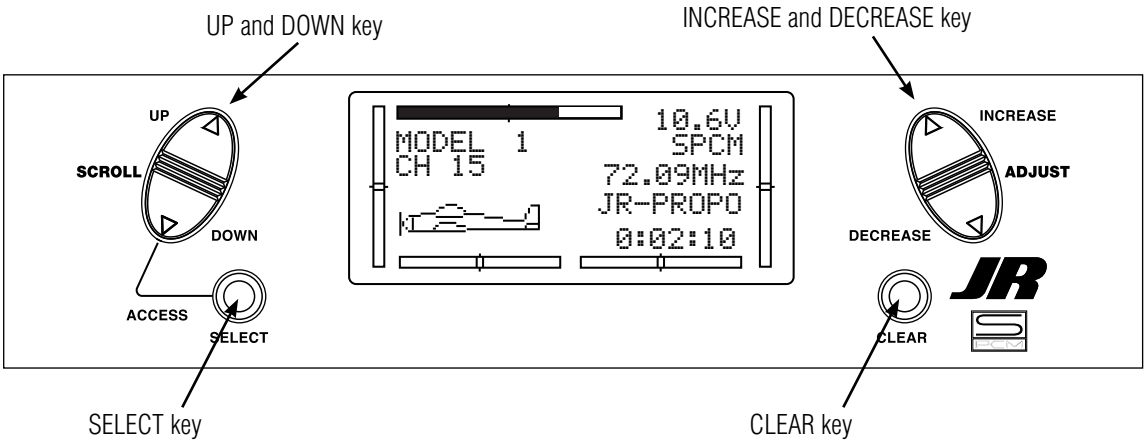
NOTE: For more information about setting up throttle curves see Page 87.

Control Identification and Location - Airplane Mode 2



Throttle ALT

The Throttle ALT function makes the throttle stick trim active only when the throttle stick is at less than half throttle. This allows accurate idle adjustments without affecting the mid to high throttle position.



Key Input and Display Functions

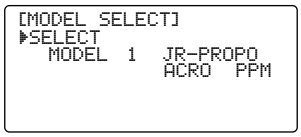
- The *UP* and *DOWN* keys are used to select the programming function.
- The *SELECT* key is used to select the channel or feature that you wish to program.
- The *INCREASE* or *DECREASE* keys are used to change the values of the selected programming feature.

The XP7202 features two programming modes. System Setup Mode and Function Mode.

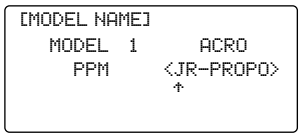
System Mode Flowchart

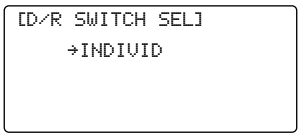
Information pertaining to each function is explained on the page number listed next to the function name. System Mode includes programming functions that are normally used during set up. System Setup programming functions include:

Model Select (Pg 32)



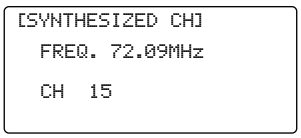
Model Name (Pg 33)





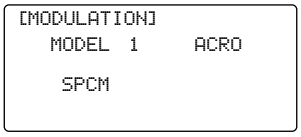
Dual Rate Select Switch (Pg 45)

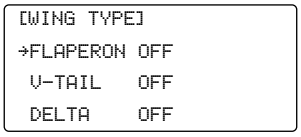
Model Type Select (Pg 34)



Synthesized Channel (Pg 43)

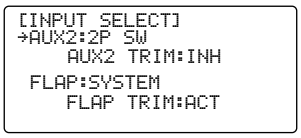
Modulation (Pg 35)





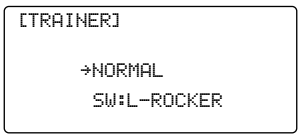
Wing Type (ACRO) (Pg 41)

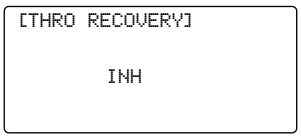
Model Reset (Pg 37)



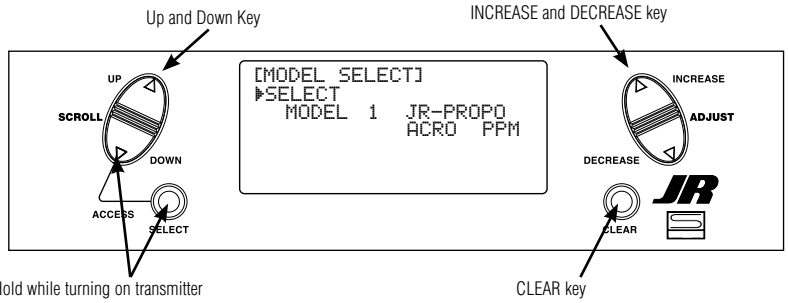
Input Select-Air (Pg 40)

Trainer (Pg 38)





Throttle Recovery (Pg 39)



To Enter the System Setup Mode

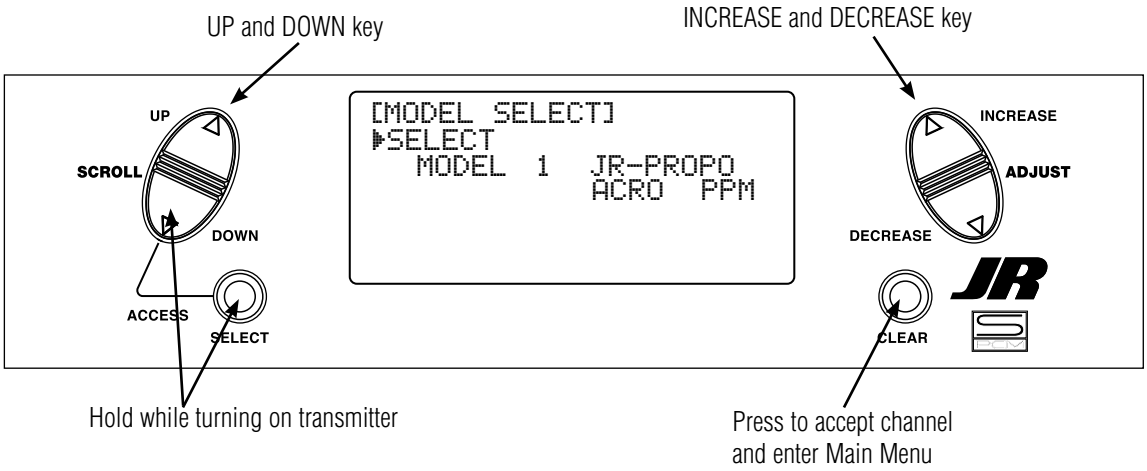
- With the power switch off, press and hold the *DOWN* and *SELECT* keys simultaneously.
- Turn on the power switch
- The system will display the last screen that was used in system set up mode. You are now in System Setup mode.

To Exit the System Setup Mode

- Press the *DOWN* and *SELECT* keys simultaneously
- The warning screen will be displayed showing the previously selected channel or turn the transmitter off.

Section 6.1: System Mode Functions

System Setup Mode



To Enter System Setup List Mode

With the transmitter off, press and hold the *DOWN* and *SELECT* keys simultaneously while turning the power switch on. Functions are selectable by pressing either the *UP* or *DOWN* keys.

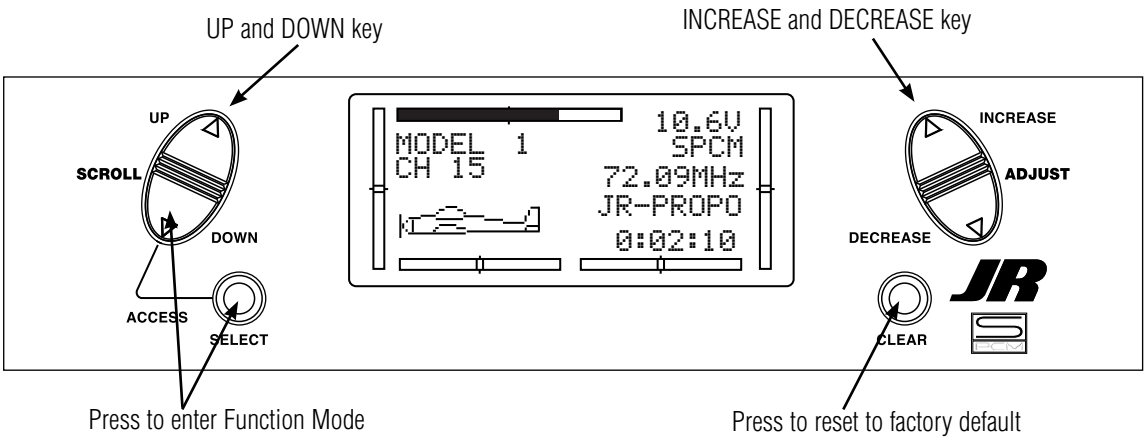
While in the System Setup Mode, press the *UP* and *SELECT* keys simultaneously and this will get you to the "List" mode.

Use the *UP* and *DOWN* keys to Scroll through the available function.

Press *DOWN* and *SELECT* to enter a selected function.

In this mode, servos are not activated, and the operating signal is not being transmitted.

By pressing the *DOWN* and *SELECT* keys simultaneously, you can return to the channel warning display, then by accepting the channel displayed on the screen (by pressing the *CLEAR* key), output transmission is restored allowing for normal operation of the servos.



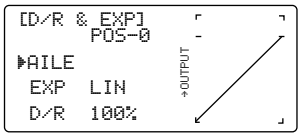
To Enter the Function Mode

From Main Screen Display press the *DOWN* and *SELECT* keys simultaneously to enter the Function Mode. In this mode, the *UP* or *DOWN* keys are used to select the desired function. The channel key is then used to scroll to the desired channel. The *INCREASE* and *DECREASE* keys are used to change the values or positions of the selected channel. The *CLEAR* key is used to return the selected value to the factory default settings.

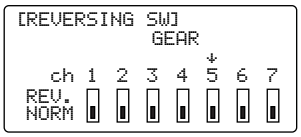
Function Mode Flowchart

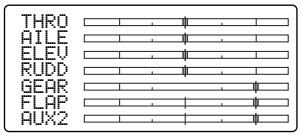
Information pertaining to each function is explained on the page number listed next to the function name. Functions will appear on the screen in the same order they are shown on the flow chart below: Therefore, by scrolling through the program, you can adjust each function related to the elevator channel quickly and easily.

Dual Rate & Exponential (Pg 45)



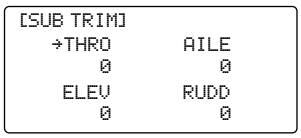
Reverse (Pg 47)

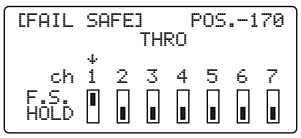




Servo Monitor (Pg 59)

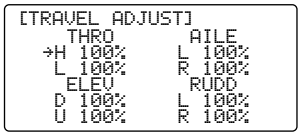
Sub Trim (Pg 48)

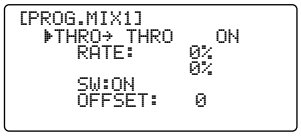




Fail-Safe (Pg 58)

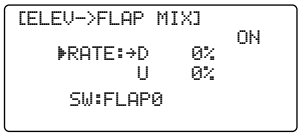
Travel Adjust (Pg 49)

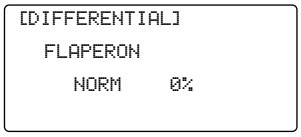




Programmable mixes (1-6) (Pg 55)

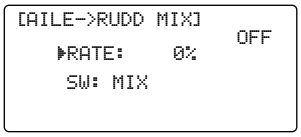
Elevator-to-Flap Mix (ACRO) (Pg 50)

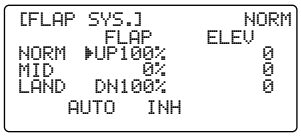




Differential (ACRO) (Pg 54)

Aileron-to-Rudder Mix (ACRO) (Pg 51)





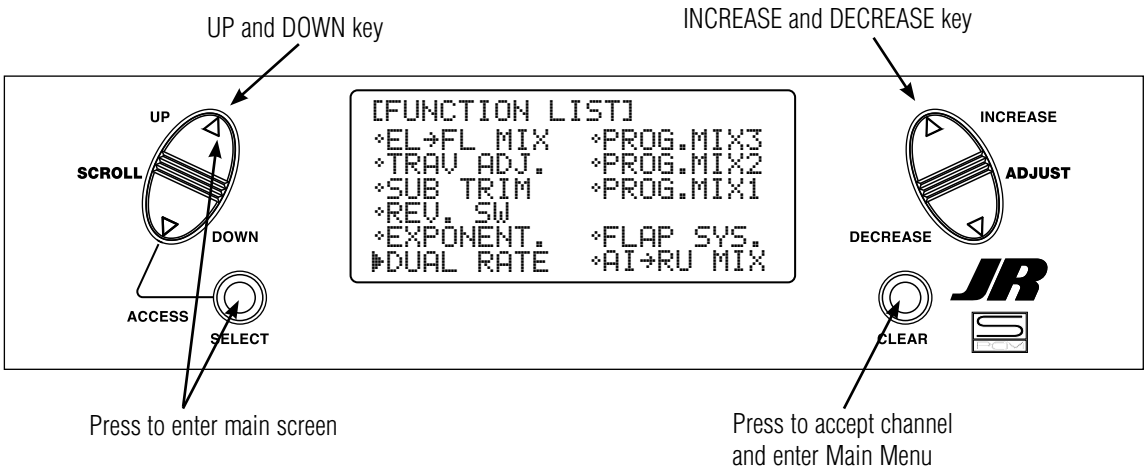
Flap System (ACRO) (Pg 52)

List Modes

The list mode screens display all the functions onscreen allowing the access of any function without having to scroll through each screen. Note that there are two list modes: a System Setup List Mode that displays all the system setup functions, and a Function List Mode that displays all the system setup functions.

To enter the Function List Mode, with the system on and in any Function mode screen, press the *UP* and *SELECT* keys simultaneously.

In either list mode, pressing the *UP* and *DOWN* keys will move the cursor to the desired function. Then pressing the *DOWN* and *SELECT* keys simultaneously will access the selected function.



To Enter the Function List Mode

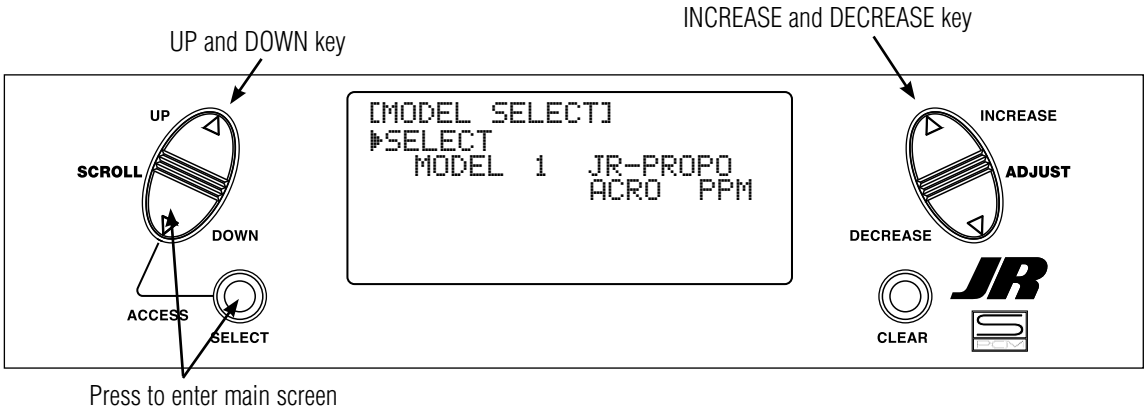
- Turn the transmitter on
- Press the *CLEAR* key to accept the channel displayed and to access the main screen
- From the main screen, press the *UP* and *SELECT* keys simultaneously
- The system is now in Function List Mode and will display a list of all the functions available.
- Use the *UP* and *DOWN* keys to Scroll through the available function.
- Press *DOWN* and *SELECT* to enter a selected function.

To Exit the Function Mode

- Press the *DOWN* and *SELECT* keys simultaneously. The system will return to the main screen or turn off the transmitter.

Model Select/Copy Function

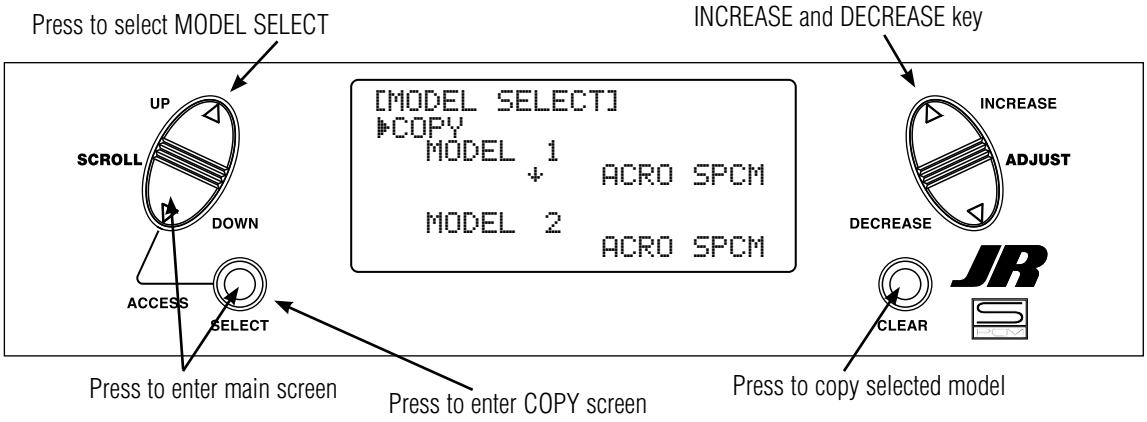
The XP7202 features a memory function that stores the programmed data for up to 20 models. Any combination of up to 20 airplanes and/or helicopters can be stored in memory. A model name feature with up to eight characters allows each model to be easily identified.



To Enter the Model Select Function

Press the *DOWN* and *SELECT* keys simultaneously and turn the power switch ON to access the System Setup Mode. Press the *INCREASE* or *DECREASE* key until the **MODEL SELECT** screen appears

Press the *INCREASE* or *DECREASE* key to select the desired model memory.



To Enter the Copy Function

Press the *DOWN* and *SELECT* keys simultaneously and turn the power switch ON to access the System Setup Mode

Press the *UP* or *DOWN* key until **MODEL SELECT** appears on screen

Press the *SELECT* button to enter the **COPY** screen

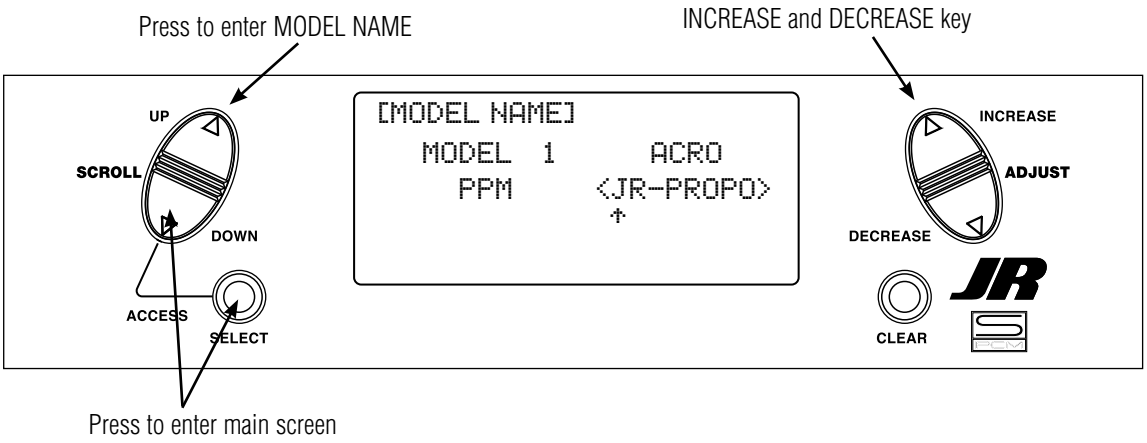
Press the *INCREASE* or *DECREASE* keys to select to model that you wish to copy the model to

Press the *CLEAR* key to copy the model to the selected model memory

NOTE: Be aware that the model that you copy to will have its memory replaced with the new model and the programming information for that model will be erased.

Model Name

The Model Name function is used to input and assign the model's name to a specific memory, allowing easy identification of each model's program. Each model's name is displayed on the main screen when that model is selected. Up to eight characters that include numbers and letters are available.



To Enter the Model Name Function

Press the *DOWN* and *SELECT* keys simultaneously, then turn on the transmitter.

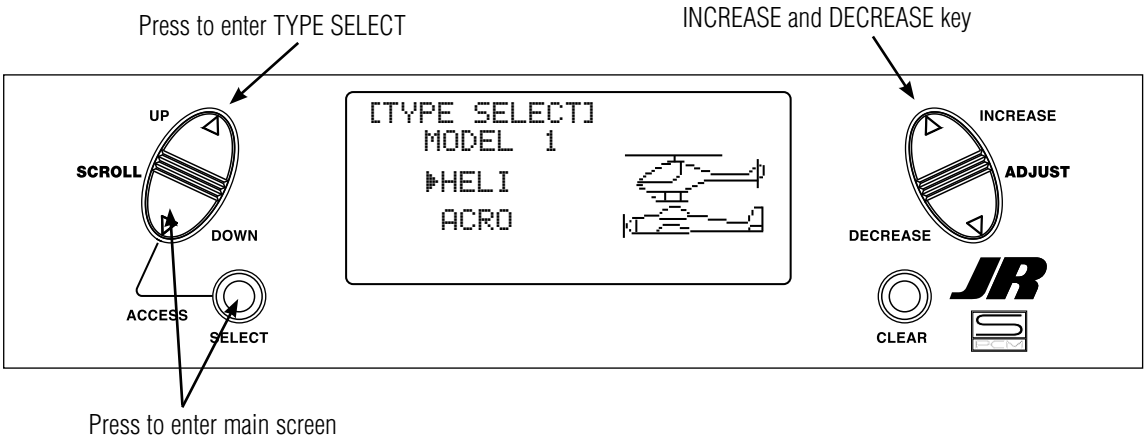
Press the *INCREASE* or *DECREASE* key until the **MODEL NAME** screen appears.

Press the *SELECT* Key to move the cursor to the desired character's position.

Press the *INCREASE* or *DECREASE* key to select the desired character.

Type Select Function

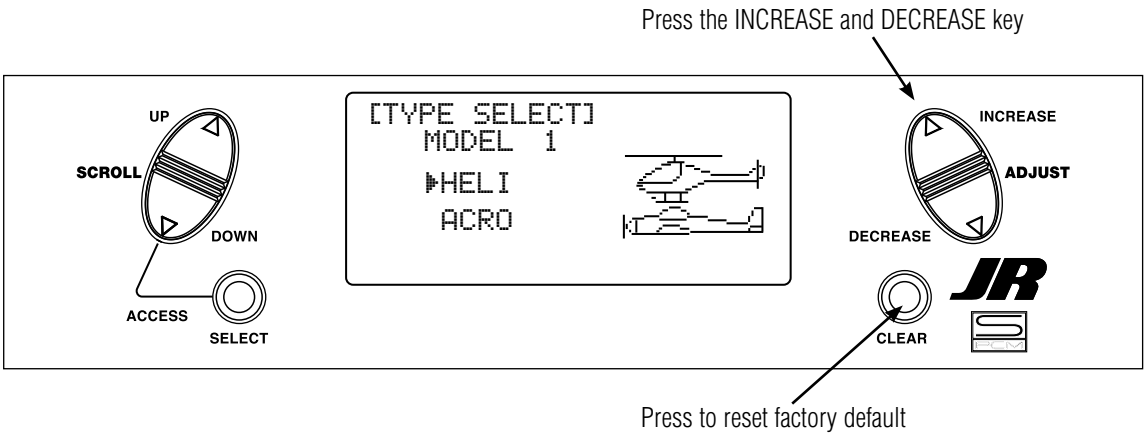
The XP7202 features two programming types: Airplane and Helicopter. The XP7202 can memorize data for up to 20 models individually.



To Enter the Type Select Mode

Press the *DOWN* and *SELECT* keys simultaneously, then turn on the transmitter.

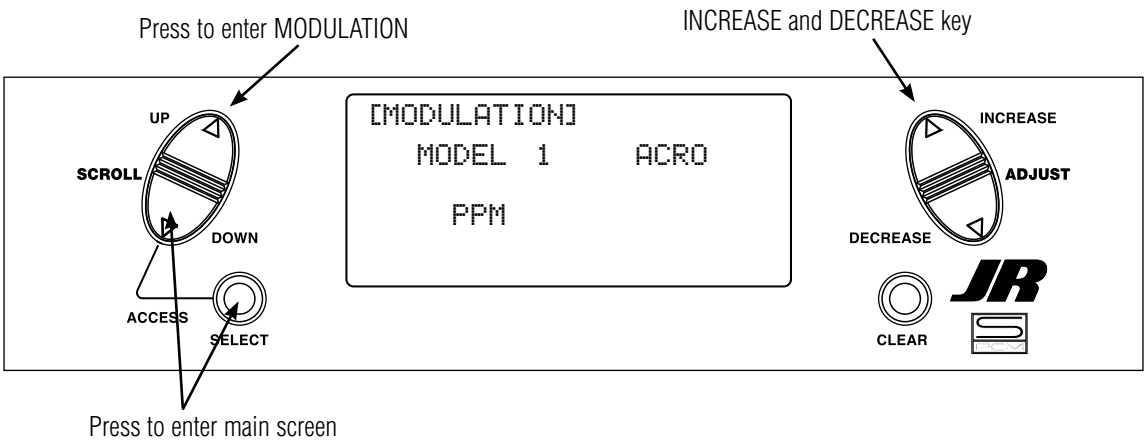
Press the *UP* key until the **TYPE SELECT** function appears on screen.



To Select a Model Type

Press the *INCREASE* or *DECREASE* key to toggle between the **HELI** or **ACRO** model types.

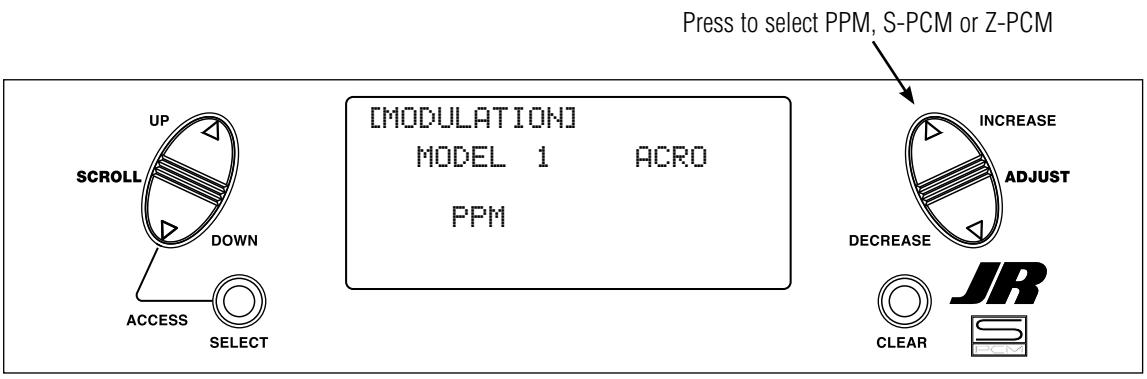
To accept the new model type press the *CLEAR* key. All settings will be set to the factory defaults.



To Enter the Modulation Function

Press the *DOWN* and *SELECT* keys simultaneously, then turn on the transmitter.

Press the *UP* key until **MODULATION** appears on screen.



To Select a Modulation Type

Press the *INCREASE* or *DECREASE* key until the desired modulation type appears on screen PPM, S-PCM or Z-PCM.

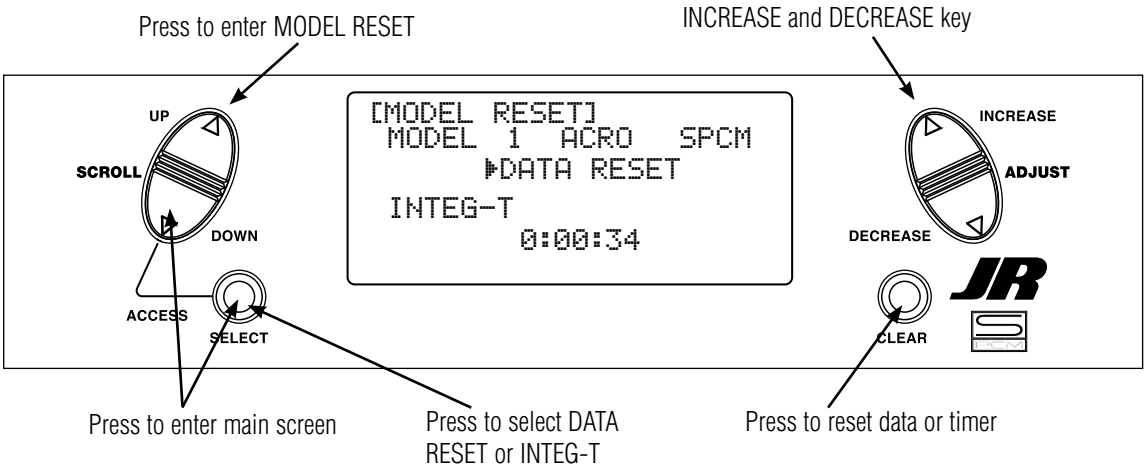
Modulation (continued)

The Modulation Function enables your XP7202 to transmit in three modulation types: PPM (commonly referred to as FM), S-PCM or Z-PCM. Note that the transmitter must be transmitting in the modulation type that matches the receiver. Refer to the receiver compatibility chart for the correct modulation.

RECEIVER	NUMBER OF CHANELS	MODULATION
NER-226	6	PPM (FM)
NER-549	9	PPM (FM)
NER-600	6	PPM (FM)
NER-610UL (micro)	6	PPM (FM)
NER-700	7	PPM (FM)
NER-720	7	PPM (FM)
NER-236	6	Z-PCM
NER-910XZ	10	Z-PCM
NER-D940S	10	S-PCM
NER-649S	10	S-PCM
NER-945S	10	S-PCM
NER-955S	10	S-PCM
NER-2000	10	S-PCM
NER-2100	10	S-PCM
NER-770S	7	S-PCM
NER-790	7	S-PCM

Model Reset and Integrated Timer Reset

The Model Reset function allows the model memory of the current model to be reset to the factory default setting. This screen also allows the integrated timer to be reset.



To perform a DATA RESET or Reset the Integrated Timer:

Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* or *DOWN* key until **MODEL RESET** appears on the screen.

Use the *SELECT* key to select **DATA RESET** or **INTEG-T.**

When **DATA RESET** is selected, pressing the *CLEAR* key will reset the date to the factory default setting for that model, or if **INTEG-T** is selected, the integrated timer will be reset to 0:00:00.

Trainer

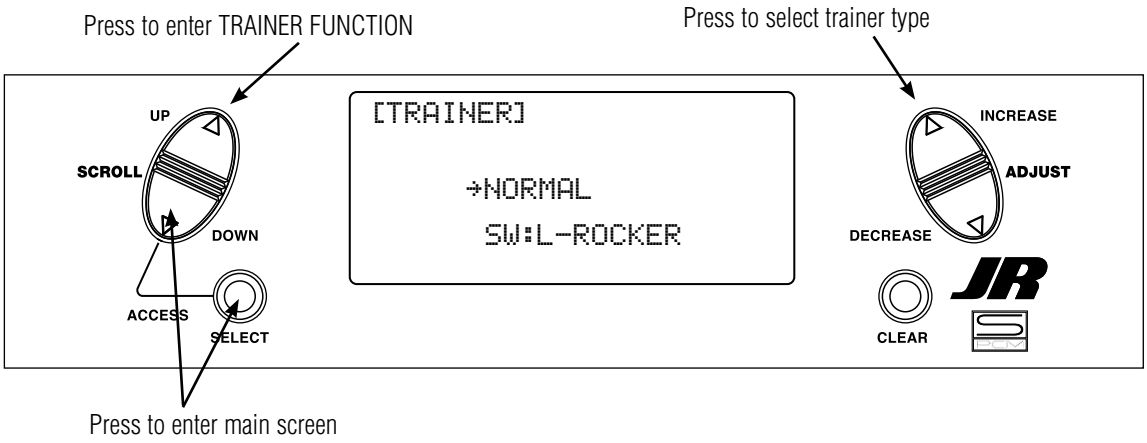
The XP7202 offers a programmable Trainer function that allows the transmitter to operate in three different Trainer modes.

Normal:
The transmitter can be used as a master or slave but the slave transmitter must have the same programming (i.e. reverse, travel adjust, dual rates, mixes sub trims, etc.) as the master.

P-Link:
Pilot Link is where the master transmitter maintains control of all primary and secondary functions (i.e. Dual Rate, Expo, Gear, Flaps, etc.) and only the primary stick controls (aileron, elevator, rudder and throttle) are transferred to the slave transmitter.

NOTE: If the slave transmitter is a normal transmitter or if another JR radio is used in normal TRAINER mode (not in a P-LINK/Slave mode), all programming functions must match the master transmitter.

Slave/P-link:
In the Slave mode, the XP7202 is used as a slave radio in conjunction with a JR radio that is used as the master that is in P-LINK mode; there is no need to match the slave's programming to the master transmitter's programming.



To Enter the Trainer Mode

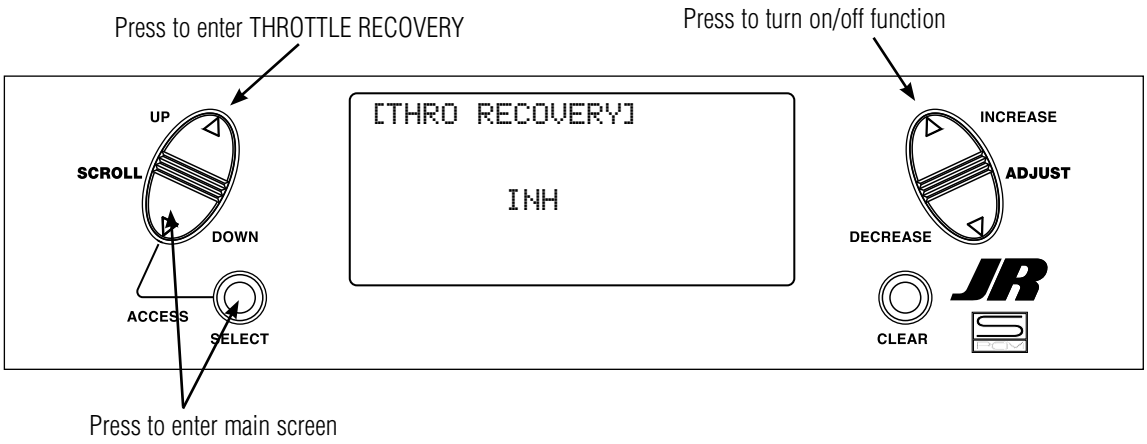
Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* key until **TRAINER FUNCTION** appears on screen.

Press the *INCREASE* or *DECREASE* key to select the desired Trainer type: **INH**, **NORMAL**, **P-LINK** or **SLAVE/P-LINK**. Also note that the trainer switch can be located on the right or left rocker switch. Use the *SELECT* key to highlight **SW:R** then press the *INCREASE* or *DECREASE* key to select the right (**R**) or left (**L**) rocker.

Throttle Recovery

The XP7202 has a unique throttle trim recovery feature. Throttle Recovery stores the last know throttle trim position before the trim is moved to the full down (closed) position. That stored position is then recalled by moving the throttle trim up (open) one notch. This makes shutting off the engine and restarting it with the correct trim position easy. Throttle Recovery must be activated for each model.



To Activate Throttle Recovery

Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* key until the **THRO RECOVERY** function appears on screen.

Press the *INCREASE* or *DECREASE* key to turn on/off the throttle recovery function.

Input Select

The purpose of the Input Selection Function is to assign the activation device for the AUX2 channel and the Flap Channel.

In System Setup Mode, select Input Select Function by pressing the *UP* or *DOWN* keys until the **INPUT SELECT FUNCTION** screen appears.

Here you have 4 choices to activate/inhibit AUX2:

1. AUX2: 2-Position Switch
2. AUX2: INH
3. AUX2: Rocker
4. AUX2 3-Position Switch

(The rocker provides proportional control, while the switch allows ON/OFF function of the AUX2 channel. You can also use the rocker for an AUX2 trim switch when using the 2P switch to activate the AUX2 function. Or you can inhibit the AUX2 rocker as well to prevent inadvertent changes.)

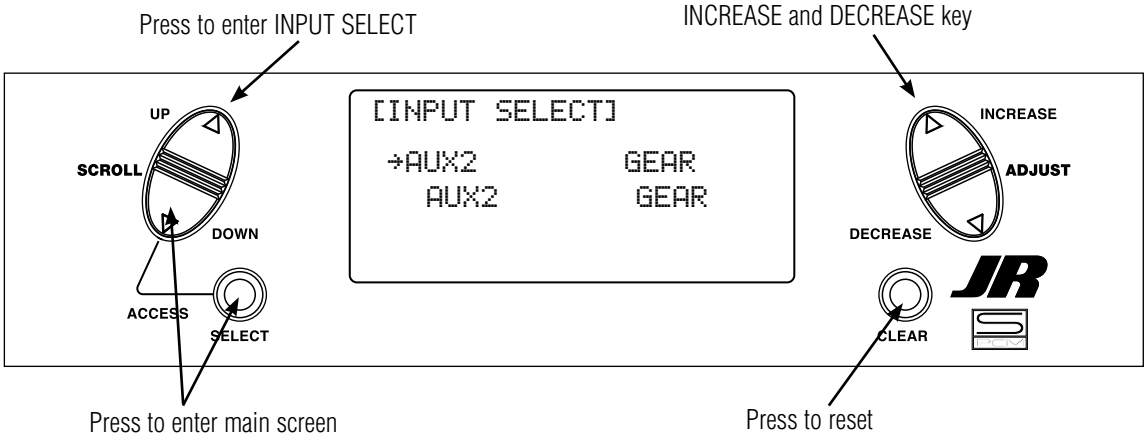
In addition, you have 3 choices to activate/inhibit FLAP;

4. FLAP: System (3 position switch)
5. FLAP: INH
6. FLAP: Rocker

(The rocker provides proportional control, while the system allows 3-position function of the FLAP channel. You can also use the rocker for a FLAP trim switch when using the 3P switch to activate the FLAP function. Finally, you can inhibit the FLAP Rocker as well to prevent inadvertent changes.)

NOTE: When operating the transmitter in a trainer mode (Normal or P-Link Master) the Trainer-Flap Rocker is not available to control the flaps.

NOTE: The individual AUX2/spoiler operation is inhibited when AUX2/spoiler is coupled for automatic landing attitude.



Wing Type

The XP7202 offers three different wing types to choose from: Normal, Flaperon and Delta (also called elevon mixing). In addition, V-Tail mixing is available from the Wing Type screen.

Normal

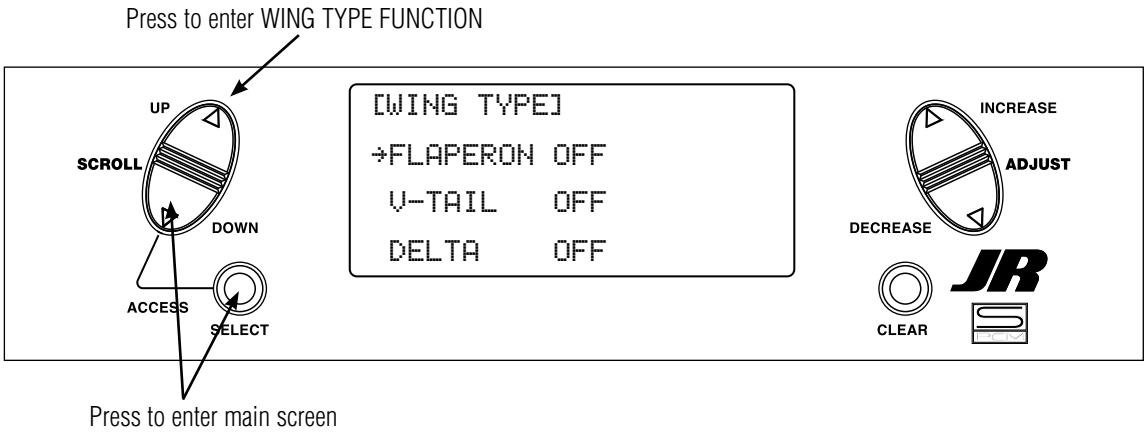
When the Flaperon and Delta wing function are off, Normal wing type is selected. Use this wing type with common aircraft that utilize only one servo for both ailerons. Normal is the default setting.

Flaperon Wing Type Selection

Flaperons require the use of one servo for each aileron and allows the use of ailerons as flaps or spoilers. This function also allows the precise independent adjust of up and down travel, and independent sub-trim and differential of each aileron.

Delta Wing Type Selection

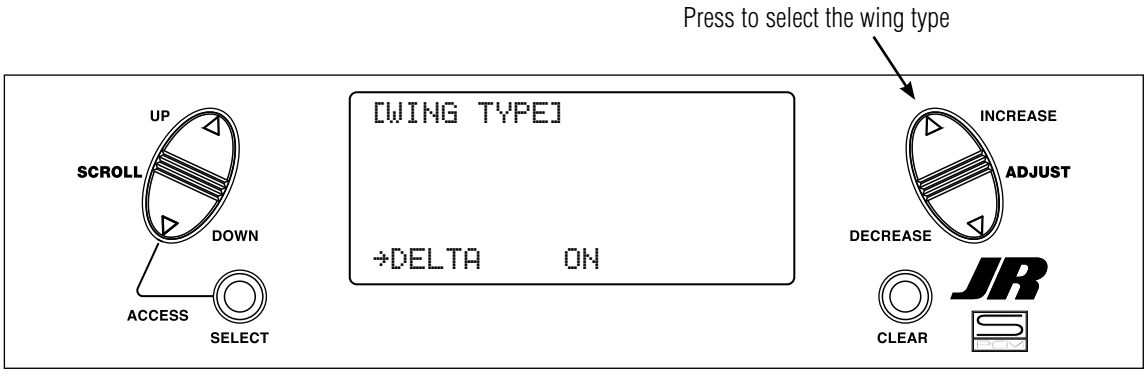
Delta wing arrangements combine the function of ailerons with the function of the elevator to allow precise control of both roll and pitch.



To Enter the Wing Type Function

Press the *DOWN* and *SELECT* keys simultaneously, then turn on the transmitter.

Press the *UP* key until **WING TYPE FUNCTION** appears on screen.



To Select a Wing Type

Press the *INCREASE* or *DECREASE* key until the desired wing type appears on screen: **NORMAL, FLAPERON, DELTA WING**

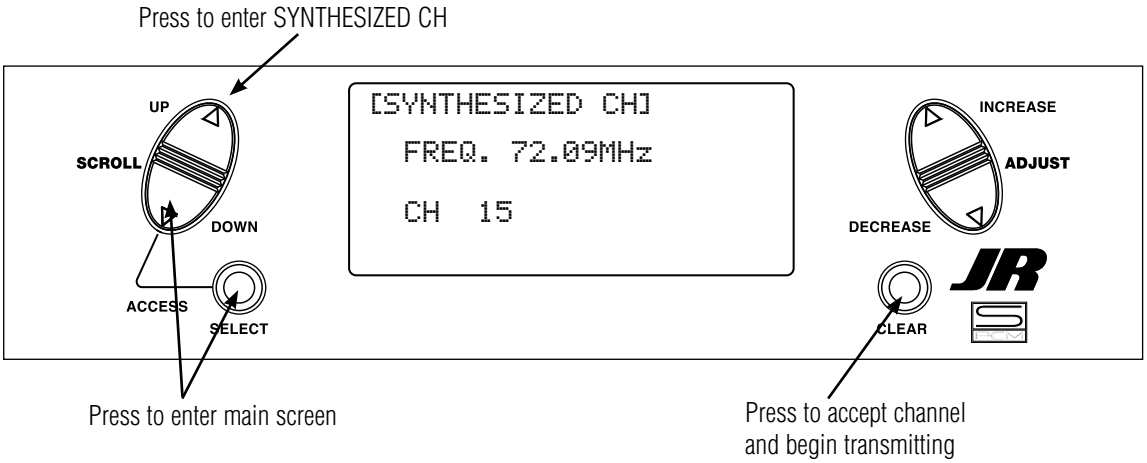
NOTE: When Flaperon or Delta Wing type is selected, the travel adjustment is used to adjust the individual servo throw; while the combined aileron travel is adjusted with the aileron dual rate. It is also possible to set aileron differential. Reverse switches are applicable for each servo. Neutral adjustments of each servo are made by the Sub-Trim Function

Flaperon Wing Type Connections AILE servo port (right aileron) AUX1 servo port (left aileron)

Delta Wing Type Connections ELEV servo port (right aileron) AILE servo port (left aileron)

Synthesized Channel Select

The XP7202 features synthesized channel selection, allowing the selection of channels 15 through 60 via the **SYNTHSIZED CH** screen.



To Select a Transmitter Channel

Press and hold the *DOWN* and *SELECT* key simultaneously while turning on the transmitter to enter system set up mode.

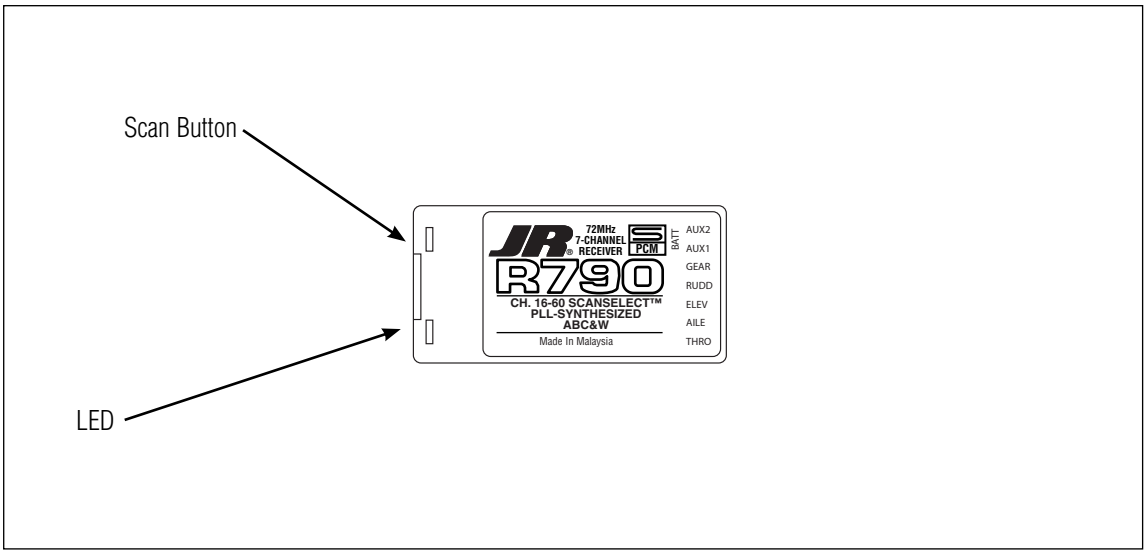
Press the *UP* or *DOWN* key until **SYNTHESIZED CH** appears on screen.

Press the *INCREASE* or *DECREASE* key to select the desired channel.

To return to the warning/ main screen, press the *DOWN* and *SELECT* keys simultaneously.

NOTE: To transmit on the selected channel displayed in the warning screen, press the *CLEAR* key. The screen will change to the main screen and the transmitter will emit a signal on the selected channel.

NOTE: When turning on the transmitter, the warning screen is displayed with the previously selected channel. No signal is being transmitted. To accept this displayed channel, press the *CLEAR* key. A signal will then be transmitted on the selected channel.



To Select a Receiver Channel

Turn the transmitter's power switch on.

Press the *CLEAR* key to accept the onscreen channel and start transmitting. Place the transmitter within five feet of the receiver.

Turn on the power to the receiver. The LED will light.

Depress the *SCAN* button until the LED turns off, and then release the button. The LED will remain off.

Depress and release the *SCAN* button once again. The receiver's LED will flash for a short period while the receiver scans for the strongest signal. When the receiver has locked onto the frequency, the receiver's LED will be on, indicating the receiver is ready for operation.

NOTE: Be sure to perform a range check before flying. (See Page 16 for details)

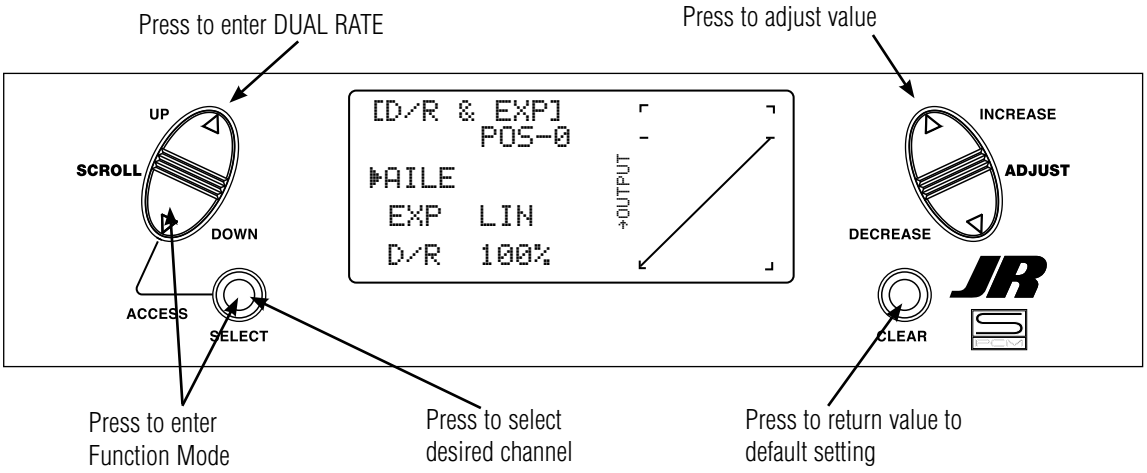
Section 6.2: Function Mode Functions

Dual Rate & Exponential

The Dual Rate function allows two control rates (control throws) to be programmed and selected with a switch. Dual rates are available on the aileron, elevator and rudder channels. Changing the dual rate value not only affects the maximum control authority but also affects the overall sensitivity of control. A higher rate yields a higher overall sensitivity. The sensitivity around center can be tailored using the Exponential function to precisely adjust control feel.

Dual rates can be controlled by their respective dual rate switches (aileron, elevator and rudder) or by 1 common sw (COM AILE, COM ELEV, COM RUDD, FLAP0 or FLAP2). The choices for this are found on the D/R SWITCH SEL screen in the System Set-up Mode for Airplanes.

Dual rates are available for the aileron, elevator and rudder channels. Dual rate values are adjustable from 0-125%. The factory default settings for both the 0 and 1 switch positions are 100%. Either switch position may be selected as the low or high rate by placing the switch in the desired position and adjusting the value accordingly.



To Adjust the Dual Rate

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* keys to select the **D/R & EXP** screen.

Press the *INCREASE* or *DECREASE* key to select the desired channel (**AILE**, **ELEV** or **RUDD**).

Press the *SELECT* key to highlight the **D/R** function

Adjust the dual rate values for the selected switch position using the *INCREASE* or *DECREASE* keys.

The Dual Rate and Expo functions for aileron, elevator and rudder can be combined on a single switch conveniently allowing high or low rates to be selected Via one switch (COM AILE, COM ELEV, COM RUDD, FLAP0 or FLAP2). The choices for this are found on the D/R SWITCH SEL screen in the System Setup Mode for Airplanes.

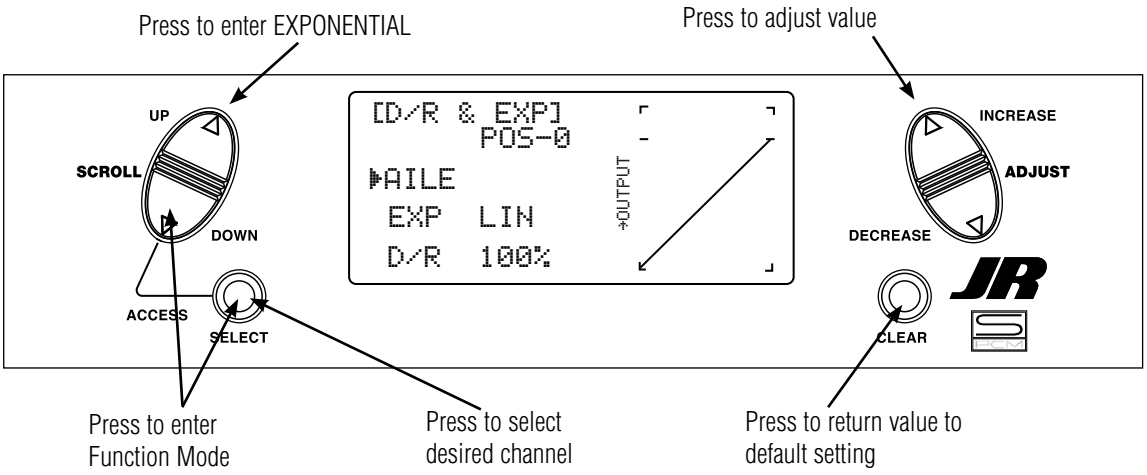
Dual Rate & Exponential (continued)

The Exponential function allows two exponential rates to be programmed and selected with a switch. Exponential is available on the aileron, elevator and rudder channels. Changing the exponential value does not affect the maximum control authority but only affects control sensitivity. Exponential is normally used to reduce control sensitivity around neutral while still allowing high control authority at the extremes of throw. The sensitivity around center can be tailored using the Exponential function to precisely adjust control feel.

Exponential rates can be controlled by their respective rate switches (aileron, elevator and rudder), or combined on a single switch (COM AILE, COM ELEV, COM RUDD, FLAP0 or FLAP2). The choices for this are found on the D/R SWITCH SEL screen in the System Setup Mode for Airplanes.

Exponential is available for the aileron, elevator and rudder channels. Expo values are adjustable from –100% - LIN - +100%. The factory default settings for both the 0 and 1 switch positions are LIN or 0%. Either switch position may be selected to give any desirable EXPO rate by placing the switch in the desired position and adjusting the value accordingly.

NOTE: A negative (-) Expo value will increase sensitivity around neutral, and a positive (+) Expo value will decrease sensitivity around neutral.



To Adjust the Exponential

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* keys to select the **DUAL RATE** and **EXPONENTIAL** screen.

Press the *INCREASE* or *DECREASE* key to select the desired channel (**AILE**, **ELEV** or **RUDD**)

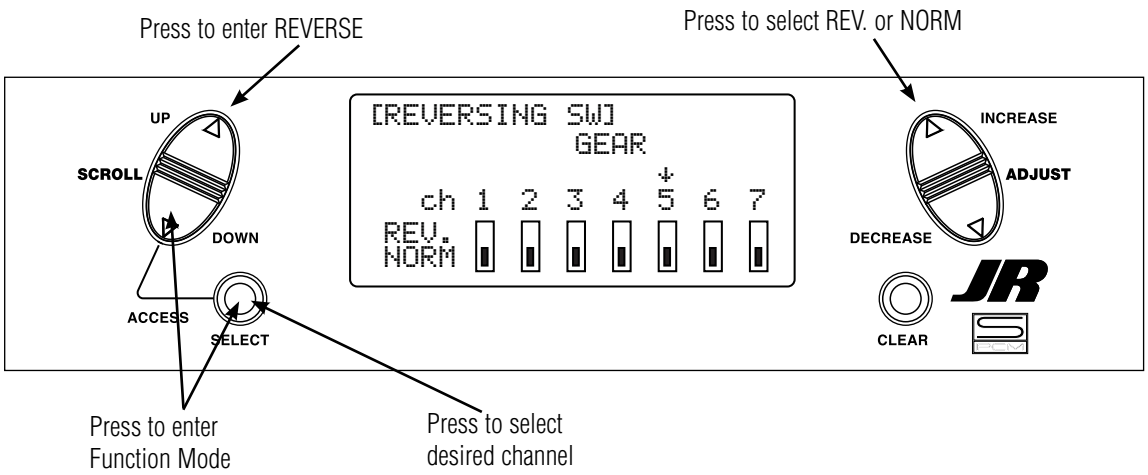
Move the selected channel's dual rate switch to the desired position, 0 or 1.

Press the *SELECT* key until **EXP** is highlighted

Adjust the Expo rate values for the selected switch position using the *INCREASE* or *DECREASE* keys.

Reverse Switch

The Reverse Switch function allows electronic means of reversing the servo's throw. Servo reversing is available for all seven channels.



To Access the Reverse Switch Mode

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* key to select the **REVERSE** screen.

Press the *SELECT* key to access the desired channel

Press the *INCREASE* or *DECREASE* keys to reverse the servo direction for that selected channel. The channels available are:

THRO: Throttle

AILE: Aileron

ELEV: Elevator

RUDD: Rudder

GEAR: Retractable Landing Gear

FLAP: Flap

AUX2: AUX2

Sub-Trim

The Sub-Trim function allows you to electronically adjust the centering of each servo. Sub-trim is individually adjustable for all seven channels, with a range of + or - 125% (+ or - 30 degrees servo travel).

CAUTION: Do not use excessive sub-trim values as it is possible to overdrive the servo's maximum travel.

NOTE: The maximum sub-trim value available is ± 125 for the channel being programmed.

The channels available are:

THRO: Throttle

AILE: Aileron

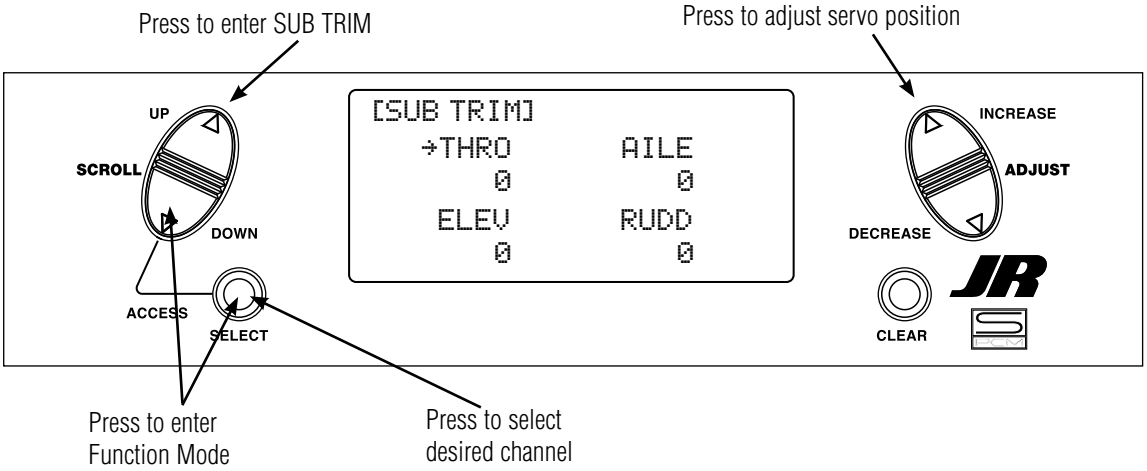
ELEV: Elevator

RUDD: Rudder

GEAR: Retractable Landing Gear

FLAP: Flap

AUX2: AUX2



To Access the Sub-Trim Function

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* key to select the **SUB TRIM** screen.

Press the *SELECT* key to access the desired channel.

Press the *INCREASE* or *DECREASE* keys to adjust the sub-trim position for that selected channel.

Travel Adjust

The Travel Adjust function allows the precise end-point adjustments of all seven channels in each direction independently. The travel adjust range is from 0-150%.

Channel available for programming are:

THRO: Throttle

AILE: Aileron

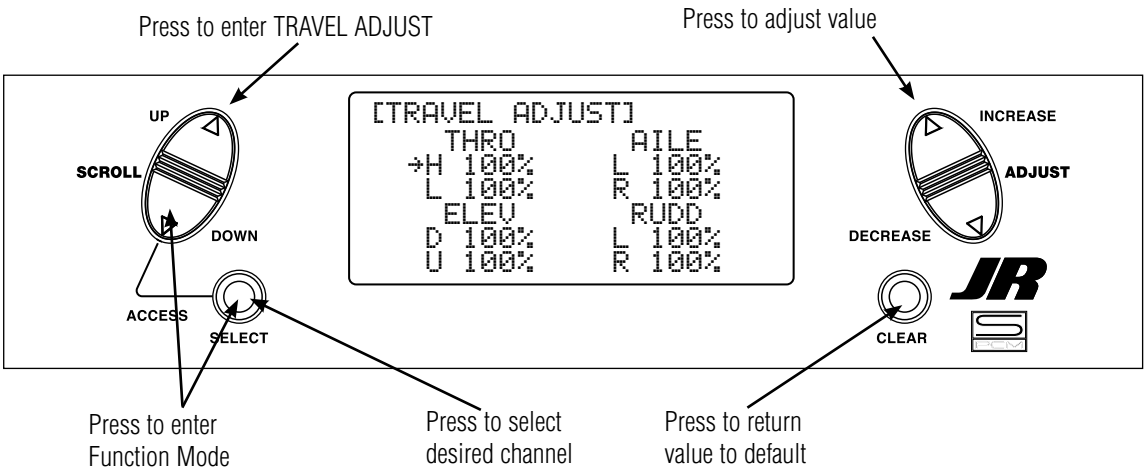
ELEV: Elevator

RUDD: Rudder

GEAR: Retractable Landing Gear

FLAP: Flap

AUX2: AUX2



To Access the Travel Adjust Function

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* key to select the **TRAVEL ADJUST** screen.

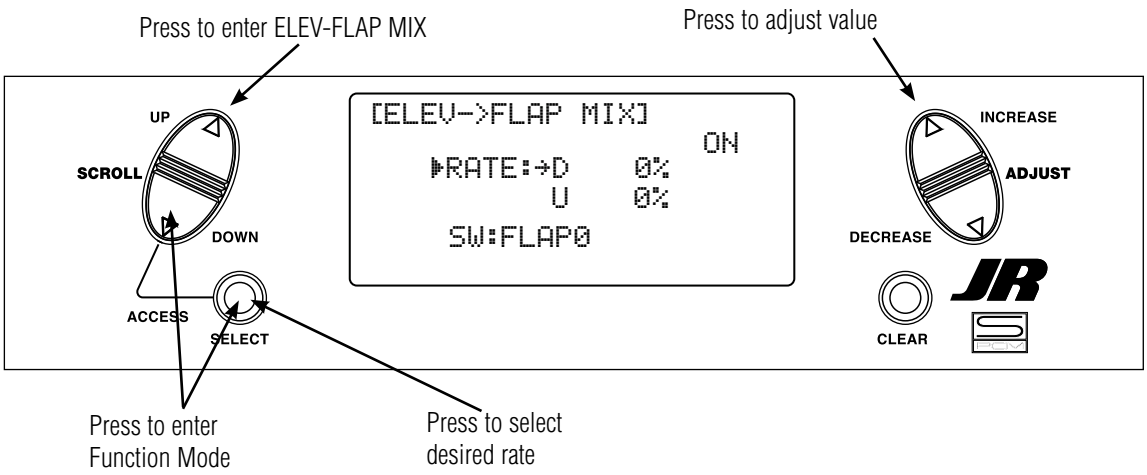
Press the *SELECT* key to access the desired channel.

Move the selected channel's stick or switch in the desired direction that you wish to adjust.

Press the *INCREASE* or *DECREASE* keys to adjust the end-point position for that selected channel's direction.

Elevator-to-Flap Mixing

The upper-most position of the flap mixing switch or the Mix Switch can be used to activate the Elevator-to-Flap Mixing function. When this system is active and a value of flaps is input, the flaps will be deflected each time the elevator stick is used. The actual flap movement is independently adjustable for both up and down elevator. A commonly used application is up elevator/down flaps and down elevator/up flaps. When used in this manner, the aircraft pitches much more quickly than normal. When you want to reverse the mixing directions, press the - key and change the mixing value from + to - (or - to +).



To Access the Elevator-to-Flap Mixing

In the Function Mode, use the *UP* or *DOWN* key to select the Elevator to Flap Mixing function and access by pressing the UP and DN keys simultaneously.

> **NOTE**: The flap mixing switch, or the Mix switch, depending on which is selected, must be in the upper position to adjust values.

To adjust the rate value, with the switch on, move the elevator stick in the desired position up or down and press the *INCREASE* or *DECREASE* button to adjust the desired mix value.

Aileron-to-Rudder Mixing

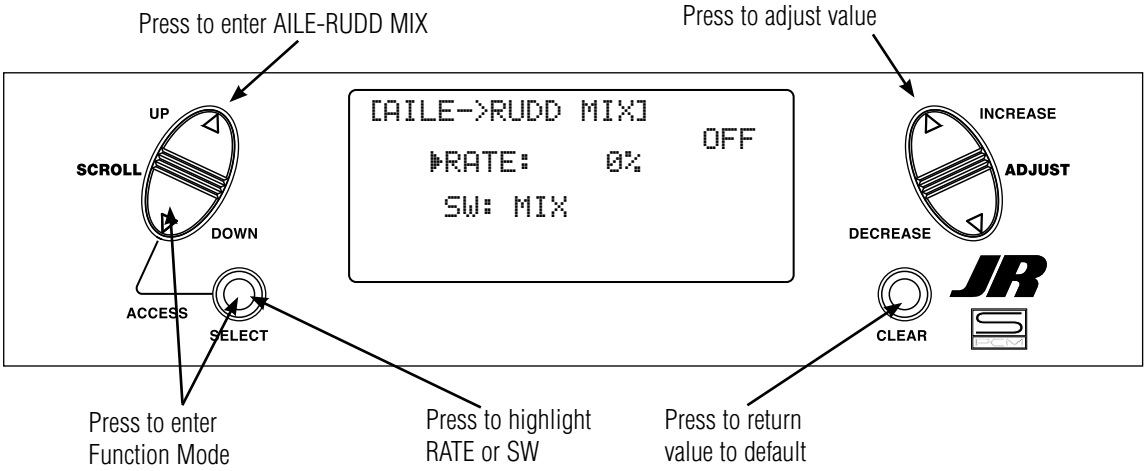
The Aileron-to-Rudder Mixing function is designed so that when input to the aileron stick is given, the rudder servo will also move, eliminating the need to coordinate these controls manually. This mixing program can be turned ON/OFF by a switch. The switches that can be selected are shown on the chart at right, with their abbreviations as they appear on the screen and the corresponding switch positions. Mix values are adjustable from 0 to 125%. When adjusting the mix value, if an opposite mixing direction of the rudder servo is required, simply press the *INCREASE* or *DECREASE* key and change the mixing value from + to - or - to +. This will reverse the mixing direction of the rudder from its original direction.

ON: Mixing Always ON

MIX Switch ON/OFF Using Mixing Switch

Flap 0 Switch ON/OFF Using Flap Mix Position 0

Flap 2 Switch ON/OFF Using Flap Mix Position 2



To Access the Aileron-to-Rudder Mix Function

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* key to select the **AILE-RUDD MIX** screen.

Press the *SELECT* key to highlight **RATE** or **SW** (switch)

To Adjust the Mix Value

With **RATE** highlighted, press the *INCREASE* or *DECREASE* keys to adjust the mix value.

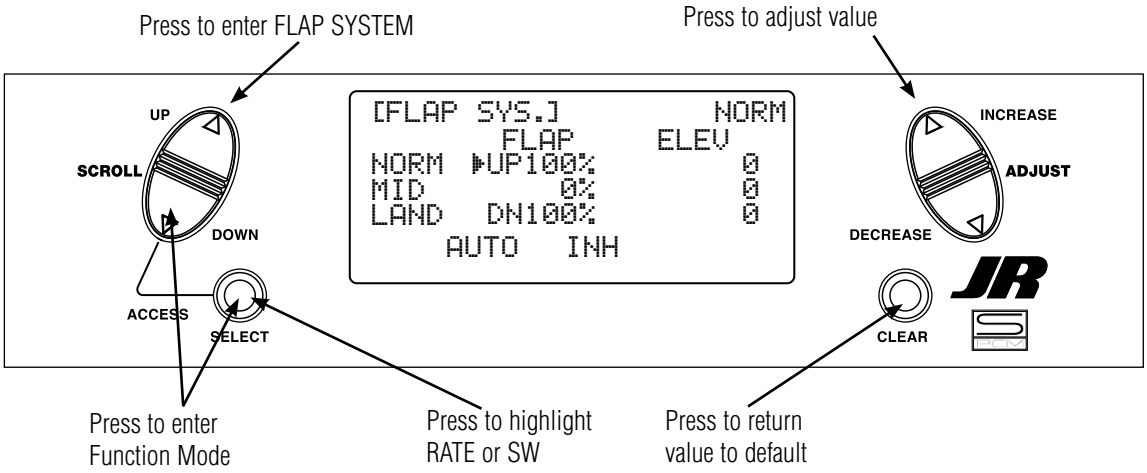
NOTE: To reverse mix directions, a negative mix value is accessible.

To Assign a Switch

With **SW** highlighted, press the *INCREASE* or *DECREASE* keys to select the desired switch used to turn on/off the mix.

Flap System

The purpose of the Flap System is to set the aircraft in a landing attitude for more consistent landings. This is accomplished by selecting values for the elevator, flap and to be activated when the land switch is engaged. The landing system can also be activated by a preset position of the throttle stick. Refer to the Automatic Landing Attitude Section for more information on how to select the preset throttle position.



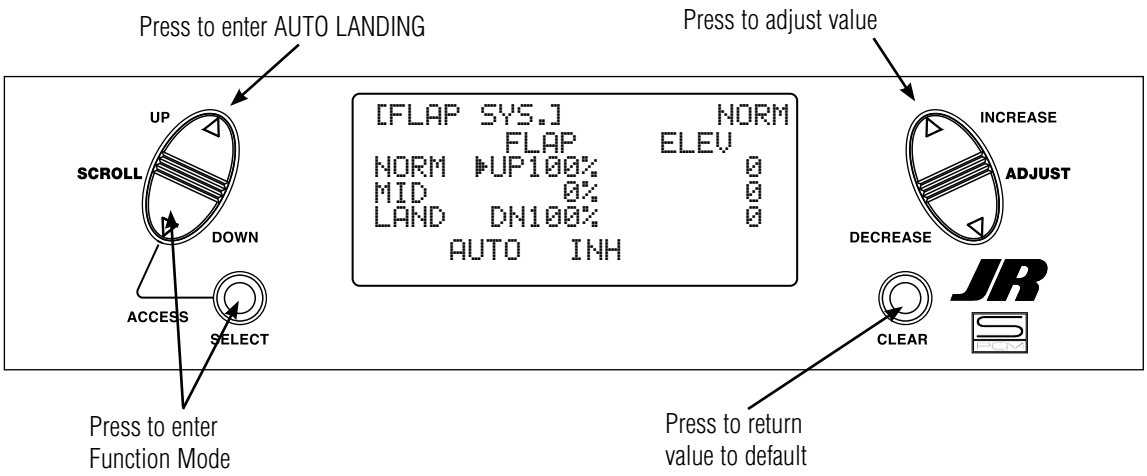
Accessing and Utilizing the Flap System

To access the landing system feature (refer to figure A):

1. Place the transmitter power switch in the ON (upper position).
2. Press the *UP* and *SELECT* keys simultaneously to enter the Function Mode.
3. Press either the *UP* or *DOWN* keys until **FLAP SYS** appears in the upper left portion of the LCD.
4. Press the *SELECT* key to position the cursor at the desired function (i.e., ELEV, FLAP, SPOI, AUTO).
5. Press the *UP* or *DOWN* keys to set the value for flap and elevator travel. The *UP* key adds up flap/elevator and the *DOWN* key adds down flap/elevator. The input is adjustable from 125% for flap and -200% for elevator. This results in a flap input from 0–60 degrees and an elevator input from 0–30 degrees.

Automatic Landing

When the Automatic Landing Function is active, the throttle stick will activate the landing system you have just set up. Any point of throttle stick travel can be set as the “auto-land” point. Once the throttle stick passes through this point and the LAND switch is in the ON, or down position, the landing system will be activated. Thus, the elevator, flaps and spoilers would be activated, if all were selected. If the flap mixing switch is not in the LAND position, the throttle stick operation would have no effect on the landing system.



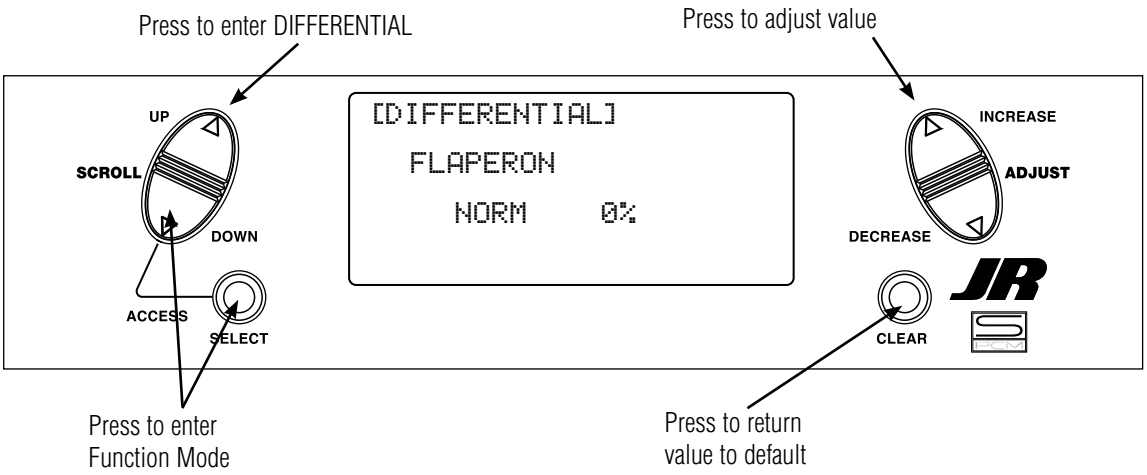
To Activate the Automatic Landing feature:

1. Press the *SELECT* key until **AUTO** is highlighted
2. Press either the *INCREASE* or *DECREASE* key to activate the Automatic Landing System. To change this value, press the *INCREASE* or *DECREASE* key to adjust the value (0% = low stick while 100% = full stick). To clear the auto land point, press *CLEAR* and the display will return to **INH**.

Differential Aileron Mixing

NOTE: Only available when Flaperon or Elevon is activated (see wing type Page 46).

The Differential Aileron function allows precise electronic adjustments of the up vs. down aileron travel of both ailerons. Aileron differential is used to reduce unwanted yaw characteristics during roll inputs. In order to access the Differential Function, flaperon or elevon wing mixing must be selected and two servos must be used to operate the ailerons.



To Access the Differential Aileron Mixing Function

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode.

In Function Mode, use the *UP* or *DOWN* key to select the **DIFFERENTIAL** screen.

Press the *INCREASE* or *DECREASE* keys to adjust the Differential value.

NOTE: Increasing the value will reduce the amount of down travel in each aileron.

Programmable Mixing 1-6

The XP7202 offers six (6) programmable mixes that allow stick or switch inputs to control the output of two or more servos. This function allows mixing any one channel to any other channel or the ability to mix a channel to itself. The mix can remain ON at all times, or it can be switched OFF in flight, using a number of different switches. Mix values are adjustable from 0 to 125%. Each channel is identified by a four-character name (i.e., Aileron - AILE, Elevator - ELEV, etc.). The channel appearing first is the master channel. The second channel is the slave channel. For example, AILE - RUDD would indicate aileron to rudder mixing. Each time the aileron stick is moved, the aileron will deflect, and the rudder will automatically move in the direction and to the position based on the value input in the programmable mix screen. Mixing is proportional, so small inputs of the master channel will produce small outputs of the slave channel. Each programmable mix has a mixing offset. The purpose of the mixing offset is to redefine the neutral position of the slave channel.

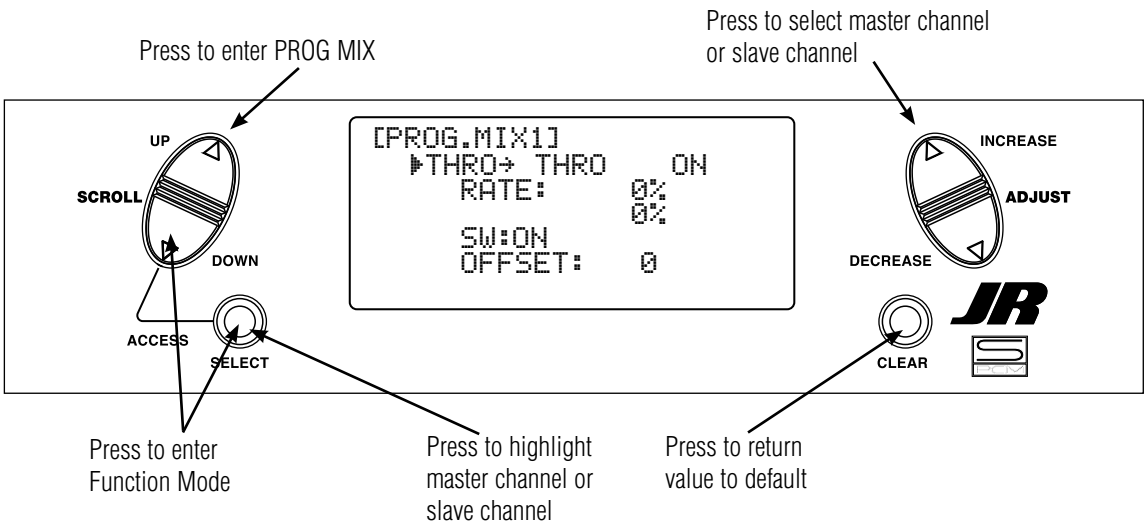
NOTE: programmable mix 5 and 6 have a built in trim include function. If programmable mix 5 or 6 is selected and a master channel is selected that has a trim lever (ie. aileron, elevator rudder or throttle) the trim will operate both the master and the slave channel.

ON: Mixing Always On

MIX: Mixing Switch Toward Self

Flap 0: Flap Switch in Flap 0 Position

Flap 2: Flap Switch in Flap 2 Position



Assigning Channels

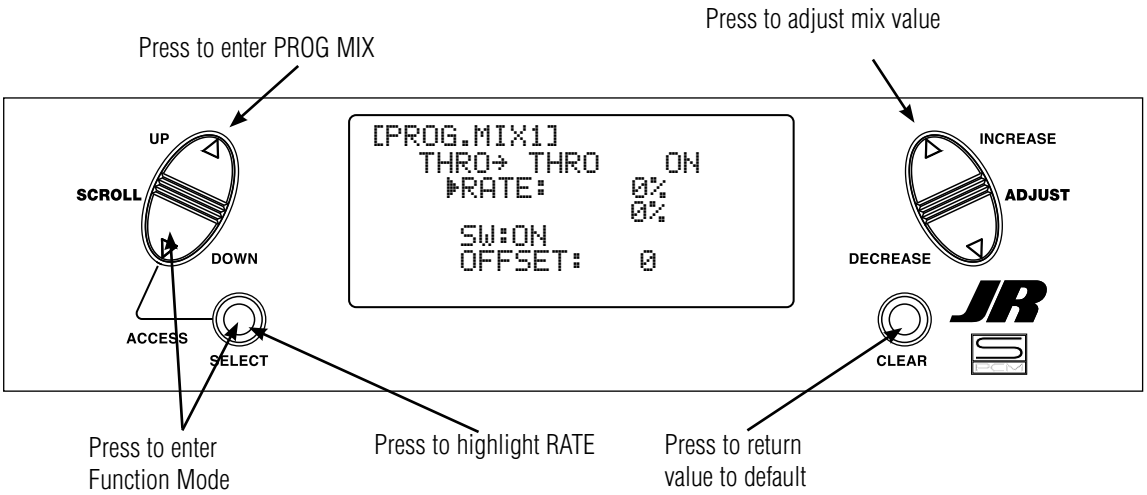
Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode.

In Function Mode, use the *UP* or *DOWN* keys to select the desired **PROG. MIX** screen. (1-6)

Press the *INCREASE* or *DECREASE* keys to select the desired master channel.

Press the *SELECT* key to highlight the slave channel.

Press the *INCREASE* or *DECREASE* keys to select the desired slave channel.



Assigning Mixing Values

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* keys to select the desired **PROG. MIX** screen. (1-6)

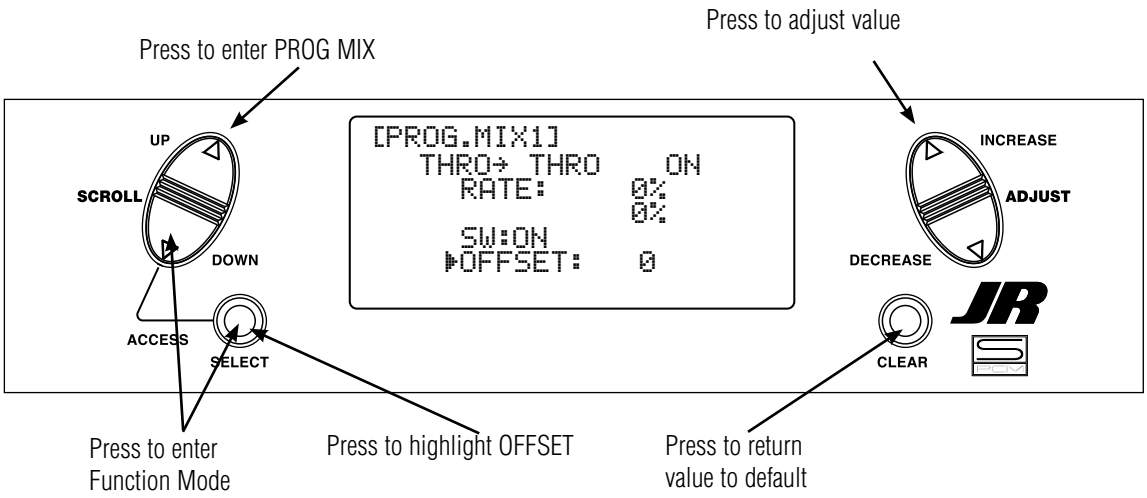
Press the *SELECT* key to highlight **RATE**

Using the stick or switch that is assigned to the master channel, move that stick or switch in the desired direction that you wish to adjust the mix value.

Press the *INCREASE* or *DECREASE* keys to adjust the mix value.

> **NOTE**: If a switch is assigned to the mix, that switch must be turned on to allow mixing values to be changed.

Moving the stick or switch in the opposite direction will allow the mix value to be adjusted in the opposite direction.



Assigning an Offset

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode.

In Function Mode, use the *UP* or *DOWN* keys to select the desired **PROG. MIX** screen. (1-6)

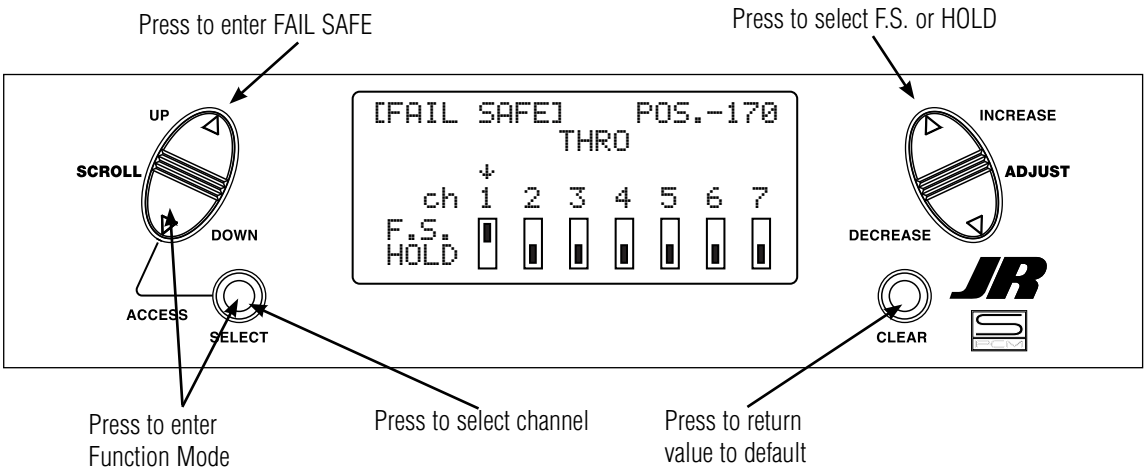
Press the *SELECT* key to highlight **OFFSET**.

To establish the offset position, use the *INCREASE* or *DECREASE* keys to change the value to the desired point. The stored offset value will appear onscreen.

To change the offset value, simply use the *INCREASE* or *DECREASE* keys to change the value. Pressing the *CLEAR* button will reset the offset to 0.

Fail-Safe

The Fail-Safe/Hold Function is available only when you use PCM modulations (see Modulation Page 40). During loss of signal, this function drives the servos to either the fail-safe preset positions or holds the last signal position. As noted, if you are in the PPM modulation, the Fail-Safe/Hold function is not applicable. Therefore, the Fail-Safe/Hold function will not appear on your LCD in PPM mode. Refer to the Modulation Selection Section for more information.



Accessing the Fail-Safe Function

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode.

In Function Mode, use the *UP* or *DOWN* keys to select the **FAIL SAFE** screen.

Press the *SELECT* key to highlight the desired channel.

Press the *INCREASE* or *DECREASE* keys to select fail-safe (**F.S.**) (the servo goes to a preset programmed position during signal loss) or **HOLD** (the servo holds last position during signal loss).

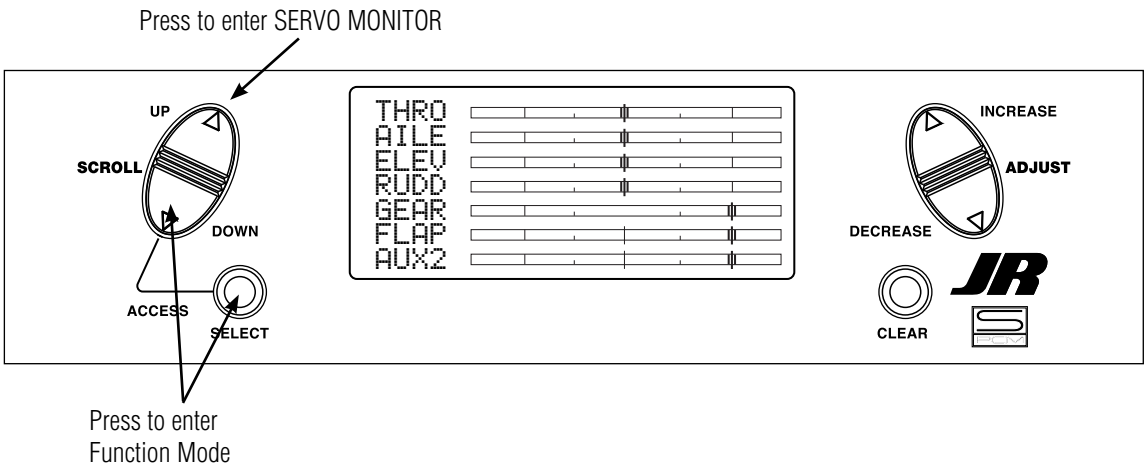
Adjust each channel by selecting the channel desired with the *SELECT* key. With the stick/switch in the desired fail-safe position, press the *CLEAR* key to store these fail-safe positions in memory.

NOTE: To test the fail-safe, turn the transmitter off. Any channel set to a fail-safe position should drive to that position, and any servo set to hold should remain in its last good position.

NOTE: The factory default settings for the Fail-Safe function have the Throttle channel set to Fail-Safe -170 (Low Throttle) and all other channels are set to hold the last good signal.

Servo Monitor

The servo monitor screen serves as a useful tool when programming your radio. It displays servo movement and direction when different programming functions, sticks and/or switches are moved.



DATA SHEET – ACRO

MODEL NAME _____

MODEL NUMBER _____

	THRO	AILE	ELEV	RUDD	GEAR	FLAP	AUX2
REVERSE SW	NORM • REV	NORM • REV	NORM • REV	NORM • REV	NORM • REV	NORM • REV	NORM • REV
SUB TRIM							
TRAVEL ADJUST	H %	L %	U %	L %	+ %	U %	U %
	L %	R %	D %	R %	– %	D %	D %
FAIL SAFE (PCM)							

			AILE	ELEV	RUDD
DUAL RATE • EXPO	0	D/R	%	%	%
		EXP	%	%	%
	1	D/R	%	%	%
		EXP	%	%	%

ELEV – FLAP MIX	UP	%
	DOWN	%

AILE – RUDD MIX	RATE	%
	SW	

		CHANNEL	SW	+POS	–POS	OFFSET
PROGRAM MIX	MIX 1	–		%	%	
	MIX 2	–		%	%	
	MIX 3	–		%	%	
	MIX 4	–		%	%	
	MIX 5	–		%	%	
	MIX 6	–		%	%	

WING TYPE	FLAPERON	
	ELEVON	
	V-TAIL	

THROTTLE CUT	

MODULATION	PPM • SPCM

FLAP SYSTEM	ELEV	%
	FLAP	

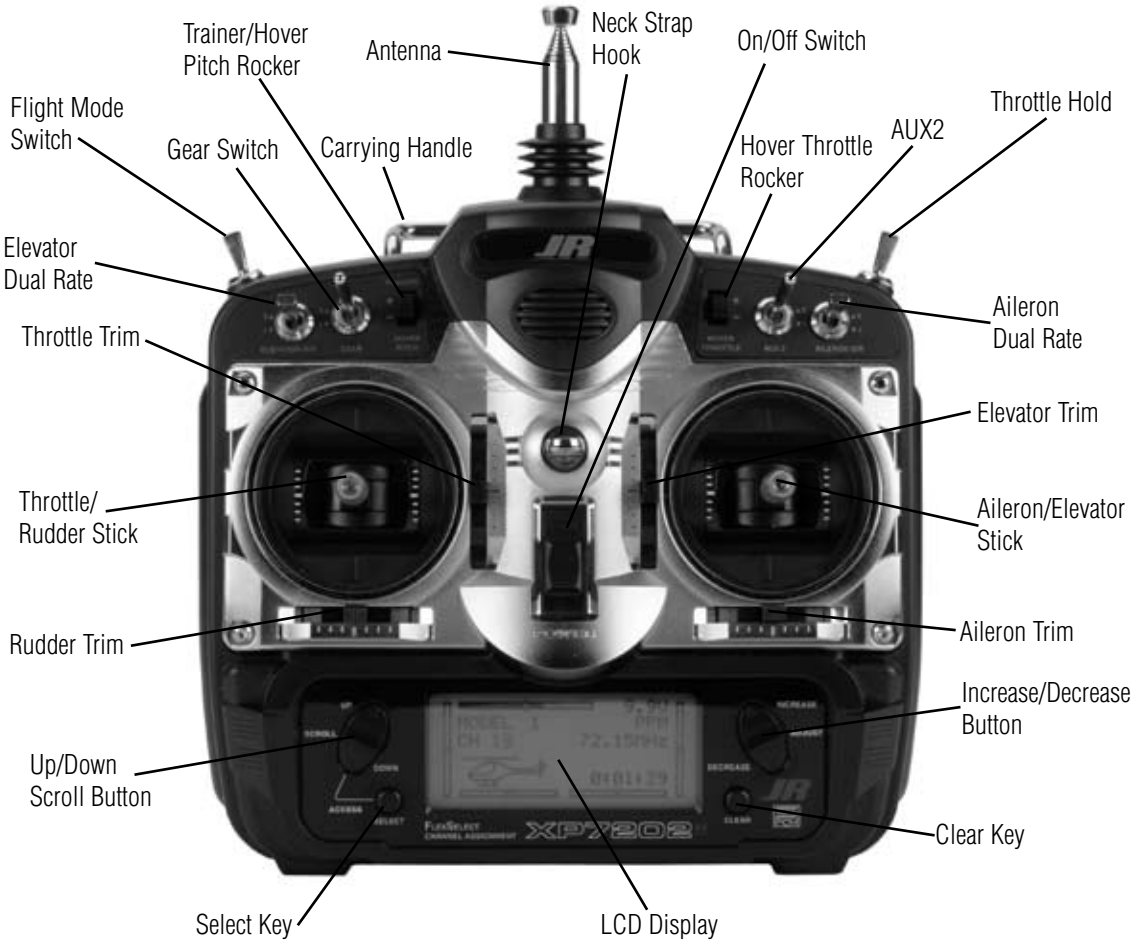
D/R SWITCH SELECT	AILERON	
	ELEVATOR	
	RUDDER	
	FLAP 2	
	FLAP 0	

NOTES:

Section 7: Helicopter Programming Guide

Transmitter Controls

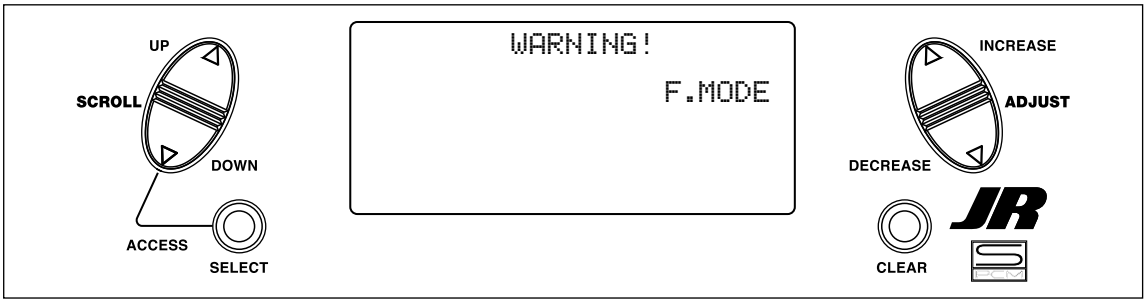
Control Identification and Location



Warning Screen for Throttle Hold/Stunt Mode

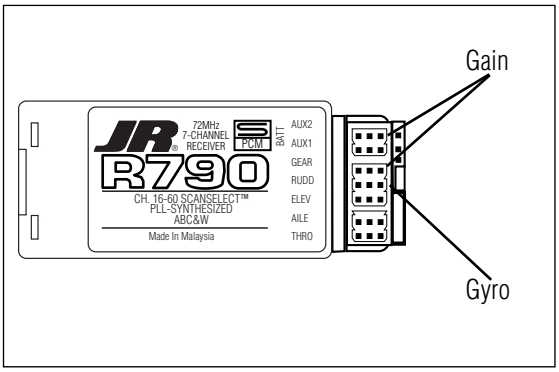
When the XP7202 is operated in the helicopter mode, there is a warning system that is employed to avoid hot starts (accidental high throttle startups) when the power switch is initially turned ON. If the flight mode switch or throttle hold is on, an alarm will sound and a warning message will be displayed on the LCD. When all switches are returned to the normal condition, the display will return to normal.

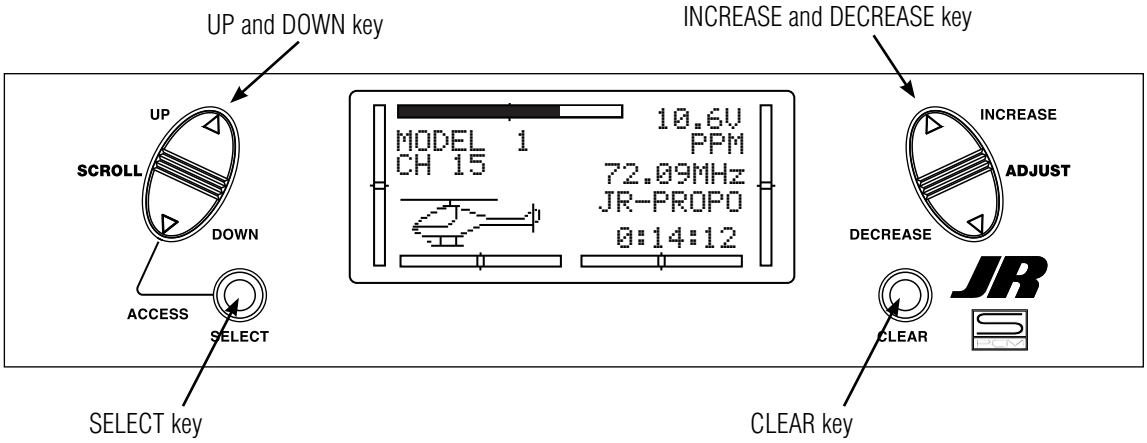
NOTE: If the Throttle Hold function is not activated prior the power switch being turned ON, no alarm will sound. Below is the display example of WARNING CONDITION when the power switch is ON.



Gyro Connections

NOTE: The Gyro Gain channel can be selected to operate on Channel 5 (Gear) or Channel 7 (AUX2). See input Select on Page 91 for detail on selecting the gain channel.





Key Input and Display Functions

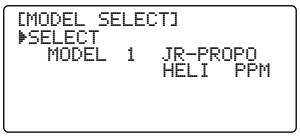
- The *UP* and *DOWN* keys are used to select the programming function.
- The *SELECT* key is used to select the channel or feature that you wish to program.
- The *INCREASE* or *DECREASE* keys are used to change the values of the selected programming feature.

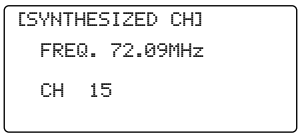
The XP7202 features two programming modes: System Setup Mode and Function Mode, which are described as follows:

Section 7.1: System Setup

Includes programming functions that are normally used during setup. System Setup programming functions include:

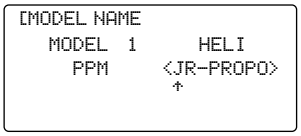
Model Select (Pg 65)

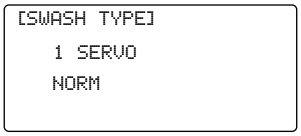




Channel Select (Pg 75)

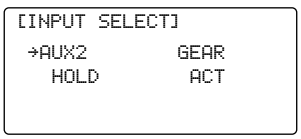
Model Name (Pg 66)





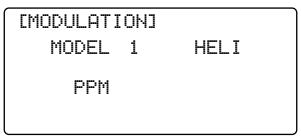
Swash Type (Pg 74)

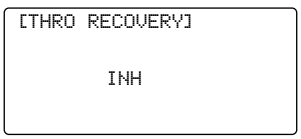
Type Select (Pg 67)



Input Select (Pg 73)

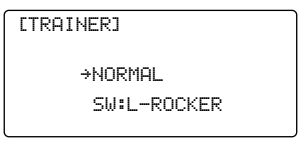
Modulation (Pg 68)



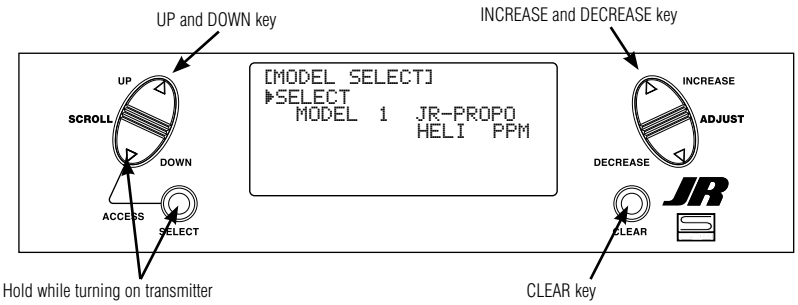


Throttle Recovery (Pg 72)

Model Reset (Pg 70)



Trainer (Pg 71)



To Enter the System Setup Mode

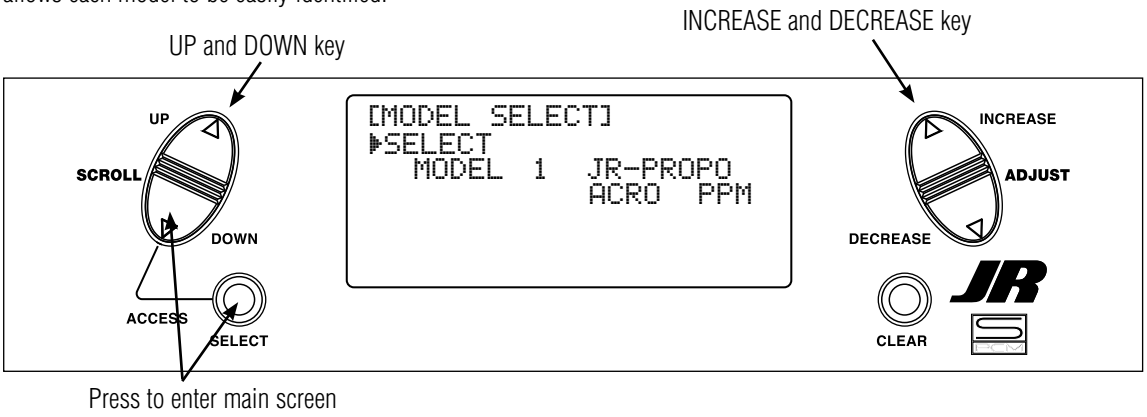
- With the power switch off, press and hold the *DOWN* and *SELECT* keys simultaneously.
- Turn on the power switch
- The system will display the last system setup screen that was used.

To Exit the System Setup Mode

- Press the *DOWN* and *SELECT* keys simultaneously.
- The warning screen will be displayed showing the previously selected channel.
- Or turn the transmitter off to exit the System Setup Mode.

Model Select/Copy

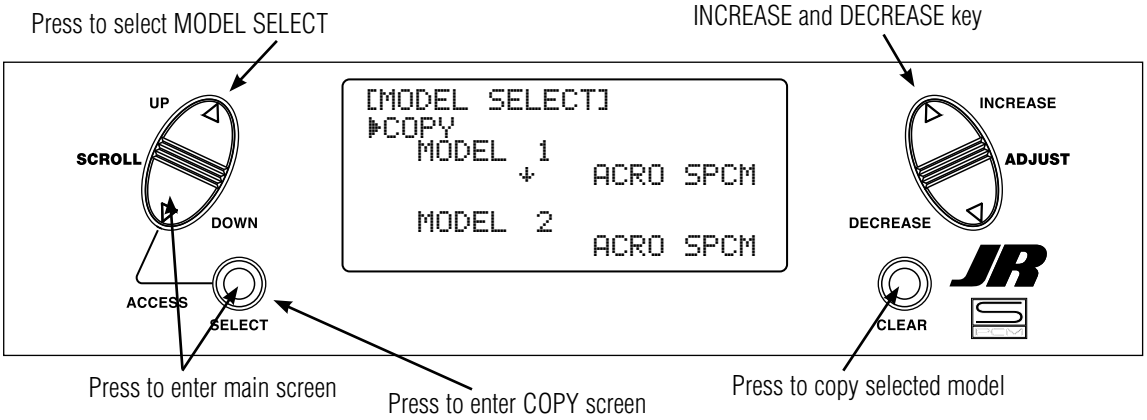
The XP7202 features a memory function that stores the programmed data for up to 20 models. Any combination of up to 20 airplanes and/or helicopters can be stored in memory. A model name feature with up to eight characters allows each model to be easily identified.



To Enter the Model Select Function

Press the *DOWN* and *SELECT* keys simultaneously and turn the power switch ON to access the System Setup Mode. Press the *INCREASE* or *DECREASE* key until the **MODEL SELECT** screen appears

Press the *INCREASE* or *DECREASE* key to select the desired model memory.



To Enter the Copy Function

Press the *DOWN* and *SELECT* keys simultaneously and turn the power switch ON to access the System Setup Mode

Press the *UP* or *DOWN* key until **MODEL SELECT** appears on screen

Press the *SELECT* button to enter the **COPY** screen

Press the *INCREASE* or *DECREASE* keys to select to model that you wish to copy the model to

Press the *CLEAR* key to copy the model to the selected model memory

NOTE: Be aware that the model that you copy to will have its memory replaced with the new model and the programming information for that model will be erased.

To Enter the Copy Function

Press the *DOWN* and *SELECT* keys simultaneously and turn the power switch ON to access the System Setup Mode

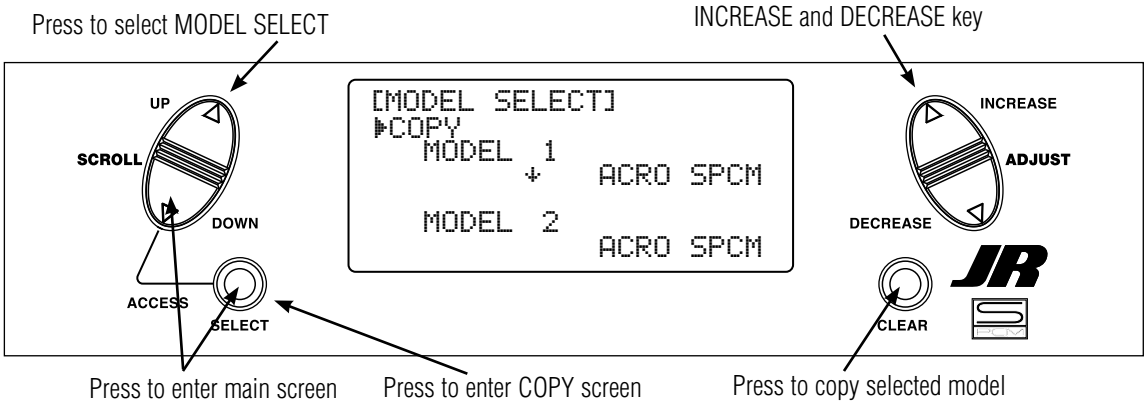
Press the *UP* or *DOWN* key until **MODEL SELECT** appears on screen.

Press the *SELECT* button to enter the **COPY** screen.

Press the *INCREASE* or *DECREASE* keys to select the model that you wish to copy the model to.

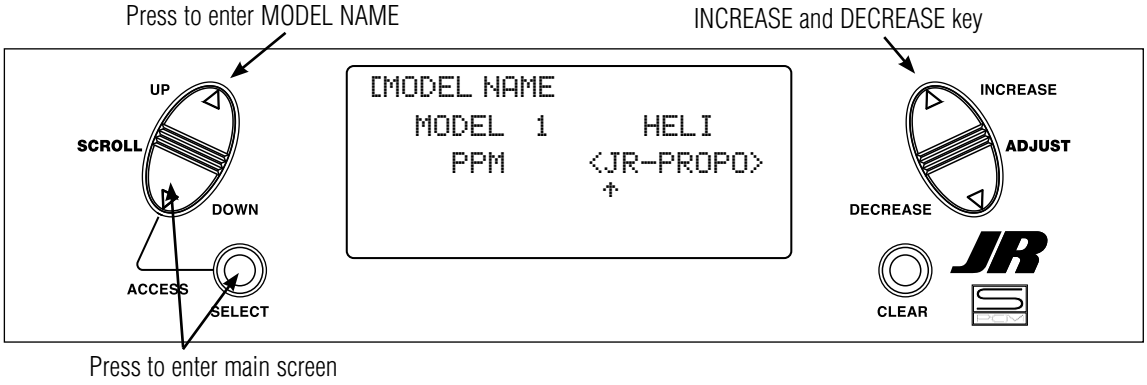
Press the *CLEAR* key to copy the model to the selected model memory.

> **NOTE**: Be aware that the model that you copy to will have its memory replaced with the new model, and the programming information for that model will be erased.



Model Name

The Model Name function is used to input and assign the model's name to a specific memory, allowing easy identification of each model's program. Each model's name is displayed on the main screen when that model is selected. Up to eight characters that include numbers and letters are available.



To Enter the Model Name Function

Press the *DOWN* and *SELECT* keys simultaneously, then turn on the transmitter.

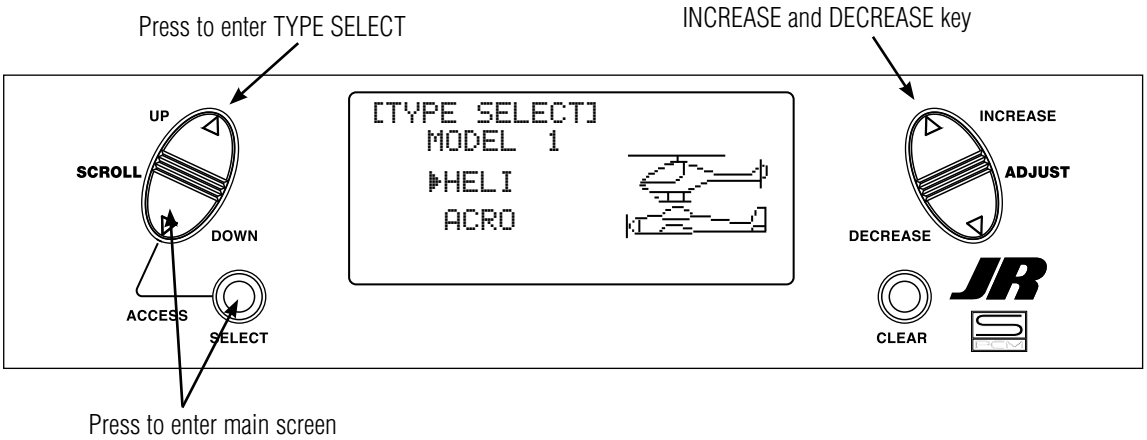
Press the *INCREASE* or *DECREASE* key until the **MODEL NAME** screen appears.

Press the *SELECT* Key to move the cursor to the desired character's position.

Press the *INCREASE* or *DECREASE* key to select the desired character.

Type Select Function

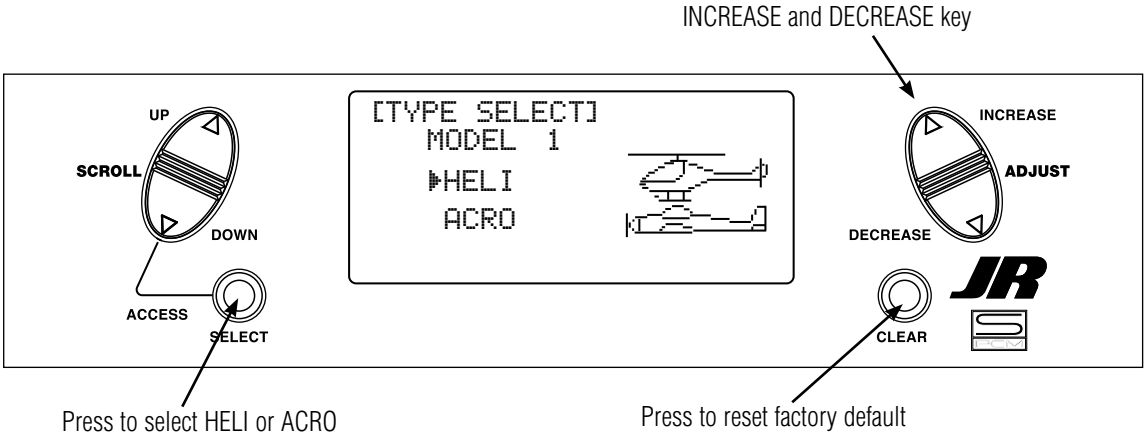
The XP7202 features two programming types: Airplane and Helicopter. The XP7202 can memorize data for up to 20 models individually.



To Enter the Type Select Mode

Press the *DOWN* and *SELECT* keys simultaneously, then turn on the transmitter.

Press the *UP* key until the **TYPE SELECT** function appears on screen.

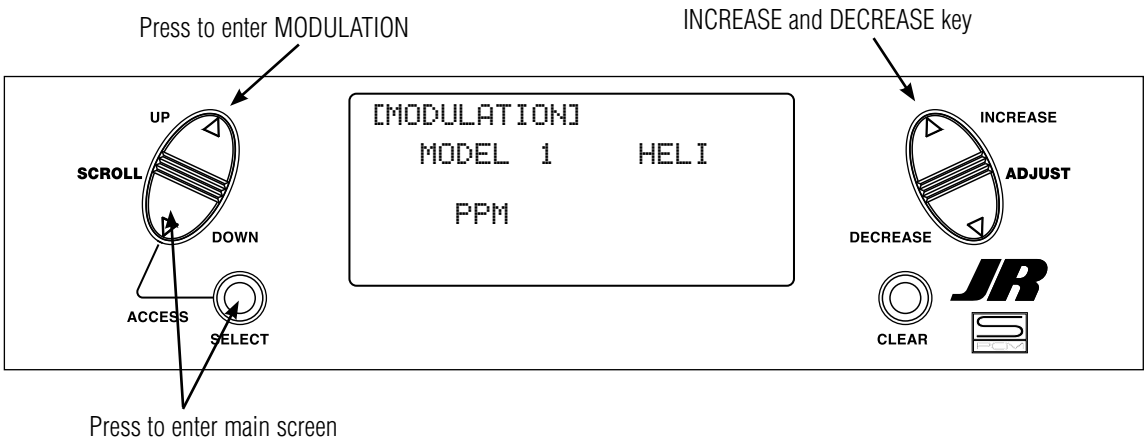


To Select a Model Type

Press the *INCREASE* or *DECREASE* key to toggle between the **HELI** or **ACRO** model types.

To accept the new model type press the *CLEAR* key. All settings will be set to the factory defaults.

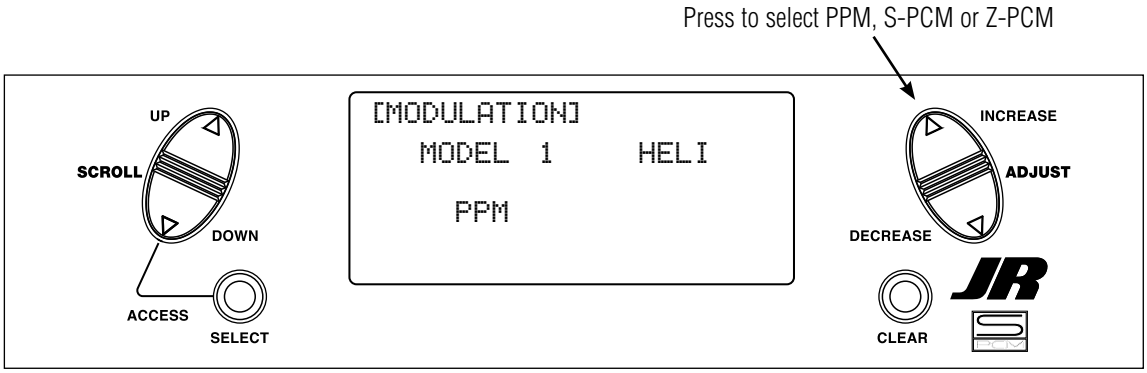
Modulation



To Enter the Modulation Function

Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* key until **MODULATION** appears on screen.



To Select a Modulation Type

Press the *INCREASE* or *DECREASE* key until the desired modulation type appears on screen PPM, S-PCM or Z-PCM.

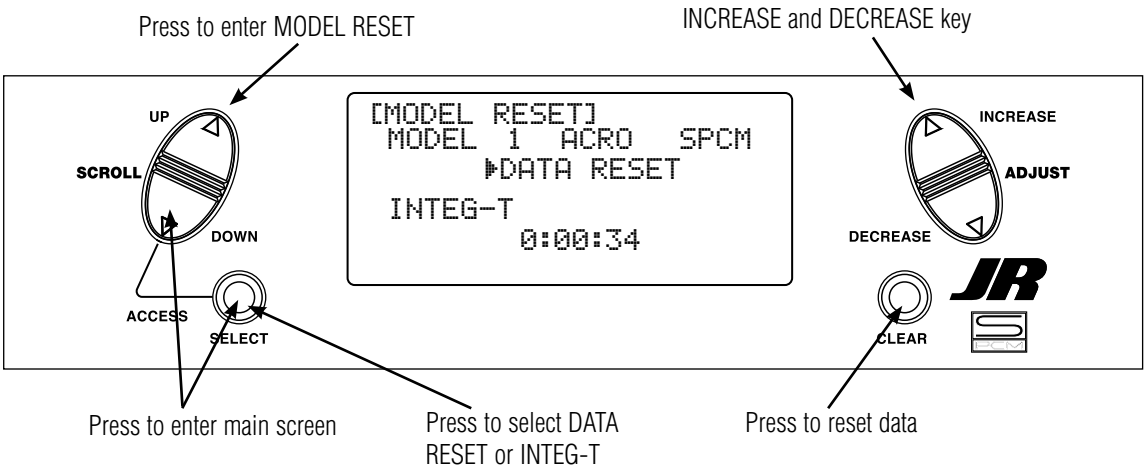
Modulation (continued)

The Modulation Function enables your XP7202 to transmit in three modulation types: PPM (commonly referred to as FM), S-PCM or Z-PCM. Note that the transmitter must be transmitting in the modulation type that matches the receiver. Refer to the receiver compatibility chart for the correct modulation.

RECEIVER	NUMBER OF CHANELS	MODULATION
NER-226	6	PPM (FM)
NER-549	9	PPM (FM)
NER-600	6	PPM (FM)
NER-610UL (micro)	6	PPM (FM)
NER-700	7	PPM (FM)
NER-720	7	PPM (FM)
NER-236	6	Z-PCM
NER-910XZ	10	Z-PCM
NER-D940S	10	S-PCM
NER-649S	10	S-PCM
NER-945S	10	S-PCM
NER-955S	10	S-PCM
NER-2000	10	S-PCM
NER-2100	10	S-PCM
NER-770S	7	S-PCM
NER-790	7	S-PCM

Model Reset/Integrated timer

The Model Reset function resets all programming functions to their default settings. Note that during a reset, the modulation type is unchanged. This screen also allows you to reset the integrated timer function to zero.



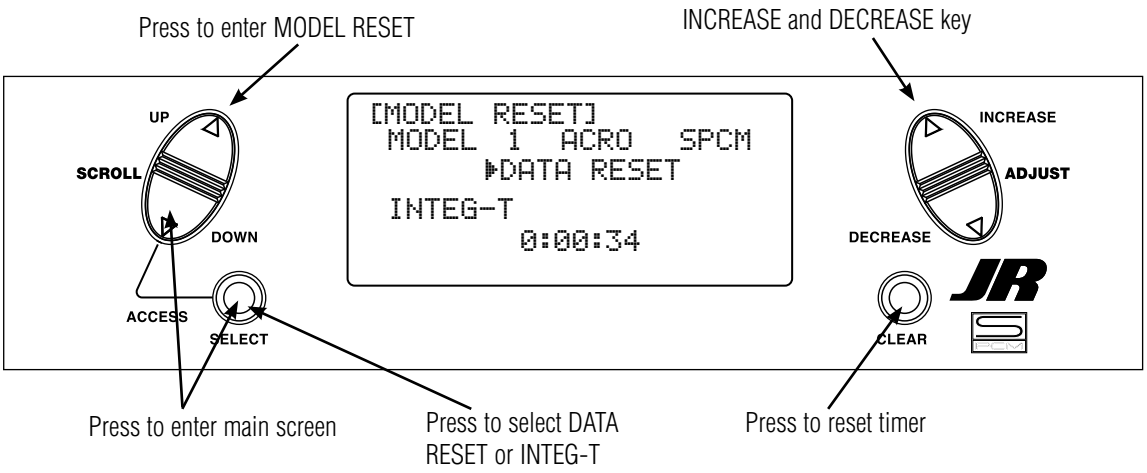
To Reset a Model

Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* key until **MODEL RESET** appears on screen.

Press the *SELECT* key until **DATA RESET** is highlighted.

Pressing the *CLEAR* key will reset the model memory to factory default settings.



To Reset the Integrated Timer

Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* key until the **MODEL RESET** function appears on screen.

Press the *SELECT* key until **INTEG-T** is highlighted.

Pressing the *CLEAR* key will reset the INTEG-T to factory zero.

Trainer

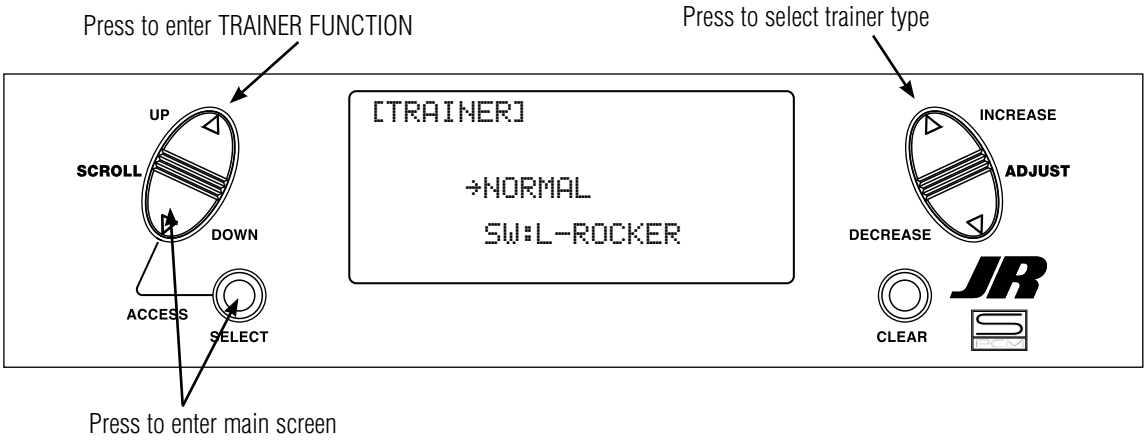
The XP7202 offers a programmable Trainer function that allows the transmitter to operate in three different Trainer modes.

Normal:
The transmitter can be used as a master or slave but the slave transmitter must have the same programming (i.e. reverse, travel adjust, dual rates, mixes sub trims, etc.) as the master.

P-Link:
Pilot Link is where the master transmitter maintains control of all primary and secondary functions (i.e. Dual Rate, Expo, Gear, Flaps, etc.) and only the primary stick controls (aileron, elevator, rudder and throttle) are transferred to the slave transmitter.

NOTE: If the slave transmitter is a normal transmitter or if another JR radio is used in normal TRAINER mode (not in a P-LINK/Slave mode), all programming functions must match the master transmitter.

Slave/P-link:
In the Slave mode, the XP7202 is used as a slave radio in conjunction with a JR radio that is used as the master that is in P-LINK mode; there is no need to match the slave's programming to the master transmitter's programming.



To Enter the Trainer Mode

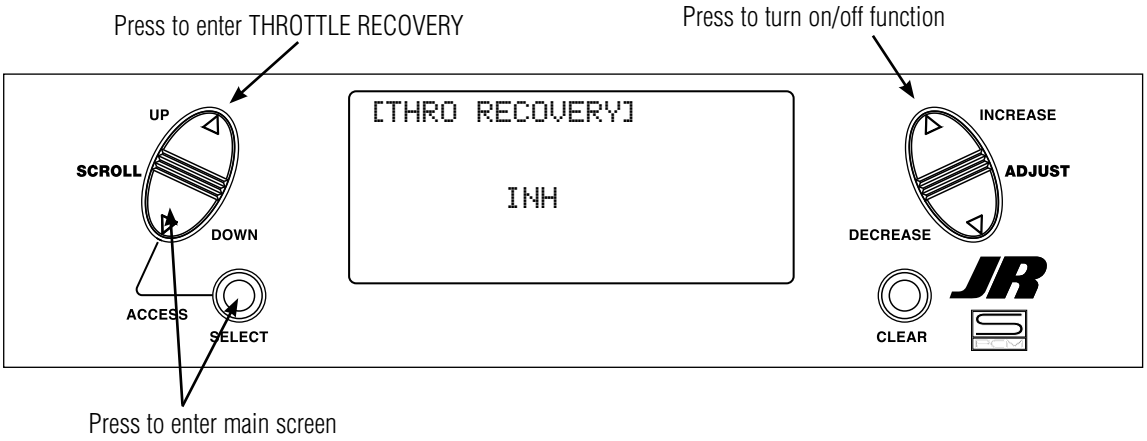
Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* key until **TRAINER FUNCTION** appears on screen.

Press the *INCREASE* or *DECREASE* key to select the desired Trainer type: **INH**, **NORMAL**, **P-LINK** or **SLAVE/P-LINK**. Also note that the trainer switch can be located on the right or left rocker switch. Use the *SELECT* key to highlight **SW:R** then press the *INCREASE* or *DECREASE* key to select the right (**R**) or left (**L**) rocker.

Throttle Recovery

The XP7202 has a unique throttle trim recovery feature. Throttle Recovery stores the last know throttle trim position before the trim is moved to the full down (closed) position. That stored position is then recalled by moving the throttle trim up (open) one notch. This makes shutting off the engine and restarting it with the correct trim position easy. Throttle Recovery must be activated for each model.



To Activate the Throttle Recovery Function

Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* key until **THRO RECOVERY** appears on screen.

Press the *INCREASE* or *DECREASE* key to turn on/off the Throttle Recovery function.

Input Select

The Input Select function is used to select the switch input for the gyro gain and the channel that will operate the gyro gain.

The Auxiliary 2 channel options are:

INH: Inhibit is selected if the gyro function will not be used on the Aux 2 channel

F.MODE: In this mode the AUX2 channel is controlled by the flight mode switch and three positions are available. Sub trim and travel adjust is used to set the center and end points for each switch position.

AUX2: The Auxiliary 2 switch controls the AUX2 Channel GYRO: The gyro mode is selected if you want to use the gyro sensing programming (see page 97) for more detail. Selecting GYRO under AUX2 assigns the gyro sensing program to operate use the AUX2 channel. In this case the gyro gain must be plugged into the AUX2 Channel 7) channel.

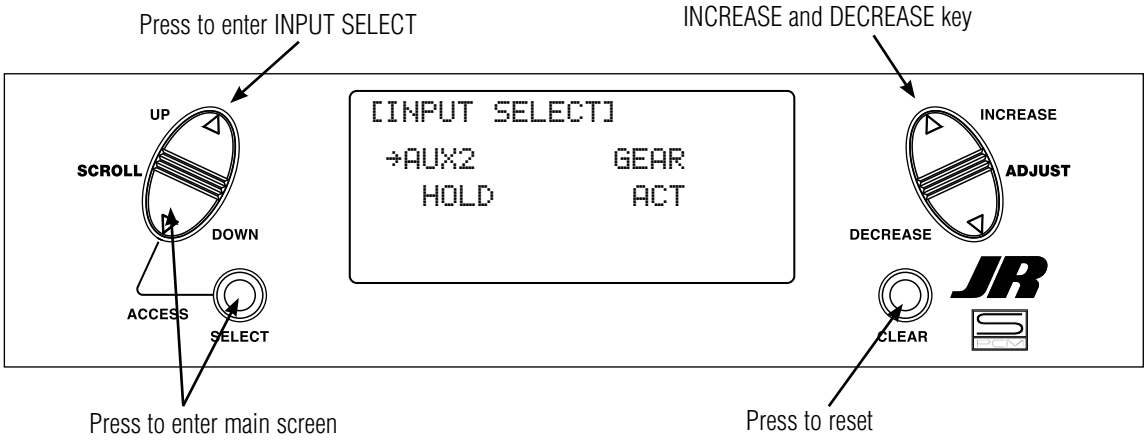
The gear channel options are:

INH: Inhibit is selected if the gyro function will not be used on the gear channel. Selecting inhibit turns off the gear channel allowing it to be used as a slave channel for mixing.

GEAR: Gear is selected if the gyro gain or retractable gear position is to be selected using the gear switch

GYRO: Gyro is selected under gear if you wish to have the gyro sensing program (page 97) operate using the gear channel.

AUX2: The Auxiliary 2 switch is used to activate the gear position.



To Select the Input Switch for the AUX2 Channel

Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* or *DOWN* key until the **INPUT SELECT** function appears on screen.

Press the *SELECT* key until **AUX2** is highlighted.

Press the *INCREASE* or *DECREASE* key to select the desired switch.

To select the input switch for the Gear channel:

Press the *DOWN* and *SELECT* keys simultaneously then turn on the transmitter.

Press the *UP* or *DOWN* key until **INPUT SELECT** appears on screen.

Press the *SELECT* key until **GEAR** is highlighted.

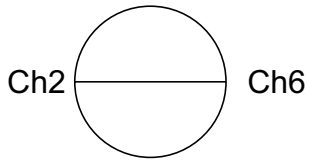
Press the *INCREASE* or *DECREASE* key to select the desired switch.

Swash Type

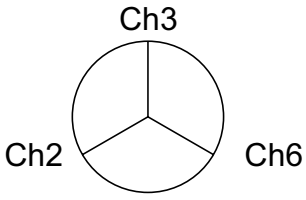
The Swashplate Mixing function enables the XP7202 system to operate many different types of swashplate control systems, including 3 versions of CCPM.

The Swashplate options are:

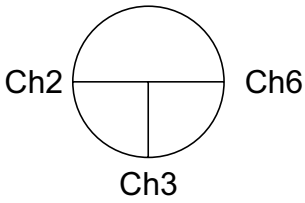
- 1 Servo: Non-CCPM, standard mixing type helicopter.
- 2 Servo/180° CCPM
- 3 Servo/120° CCPM (JR® style, most popular)
- 3 Servo/90° CCPM



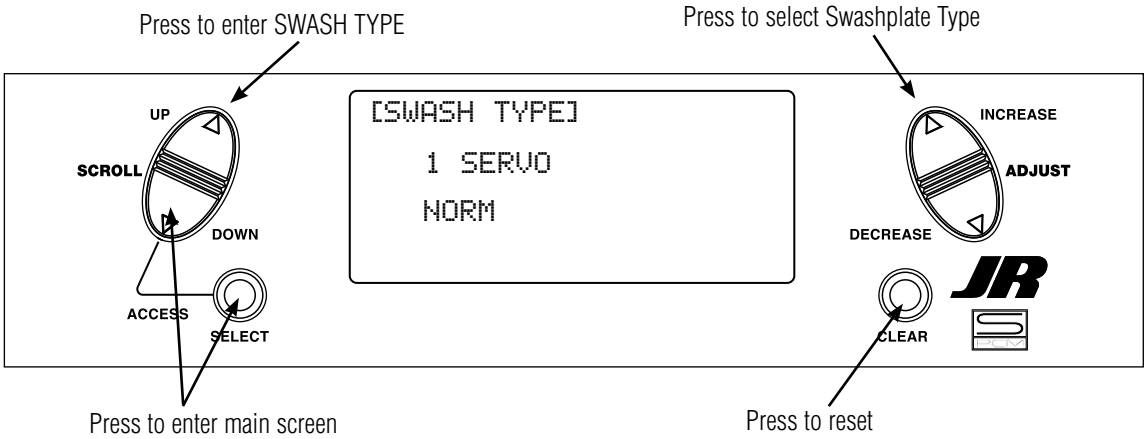
2 Servo/ 180 CCPM



3 Servo/120 CCPM
(JR style, most popular)



3 Servo/90 CCPM

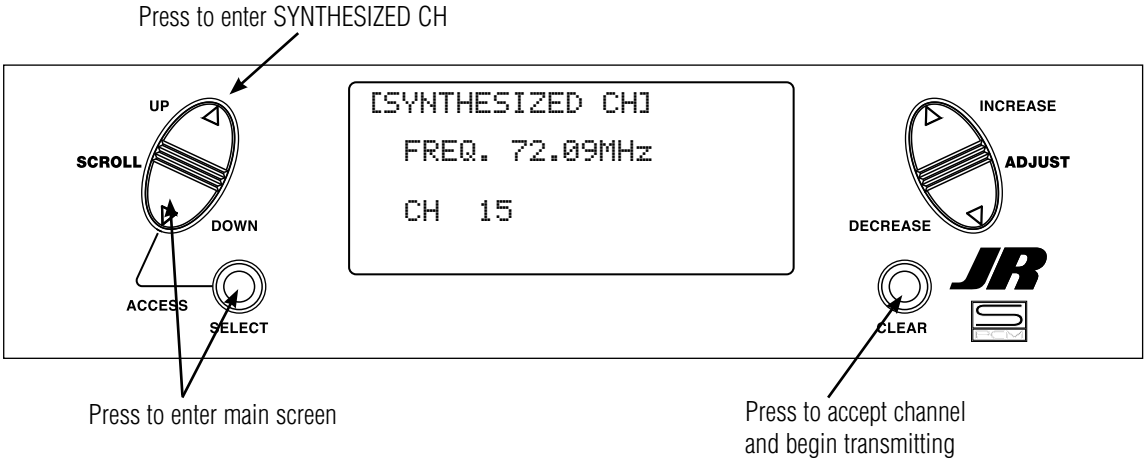


Accessing the Swashplate Types

1. While pressing the *DOWN* and *SELECT* keys, switch the transmitter to the On position to enter the System Mode.
2. Press either the *UP* or *DOWN* key until **SWASH TYPE** is displayed in the LCD.
3. Press the *INCREASE* or *DECREASE* keys to change the swashplate type.
4. Pressing the *CLEAR* key will reset the swashplate type to the Normal position.
5. Press the *UP* key to access the **MODEL SELECT** function.
6. Press the *DOWN* key to access the **SWITCH SELECT** function.
7. Exit the SWASH TYPE function by pressing the *DOWN* and *SELECT* keys simultaneously.

Synthesized Channel

The Synthesized Channel function allows all legal 72MHz channels, (channel 15 through 60) to be selected). The selected channel will not transmit until it is accepted on the warning screen each time the transmitter is turned on. Also note that the receiver must be on the same channel.



To Select a Channel

TRANSMITTER:

Press and hold the *DOWN* and *SELECT* keys simultaneously while turning on the transmitter to enter System Setup mode.

Press the *UP* or *DOWN* key until **SYNTHESIZED CH** appears on screen.

Press the *INCREASE* or *DECREASE* key to select the desired channel/ frequency.

Press the *DOWN* and *SELECT* keys simultaneously to return to the WARNING screen.

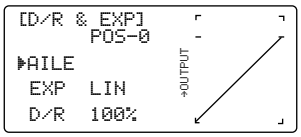
To transmit on the selected channel displayed in the warning screen press the *CLEAR* key. The screen will change to the main screen and the transmitter will emit a signal on the selected channel.

> **NOTE**: When turning on the transmitter, the warning screen is displayed with the previously selected channel. No signal is being transmitted. To accept this displayed channel, press the *CLEAR* key. A signal will then be transmitted on the selected channel.

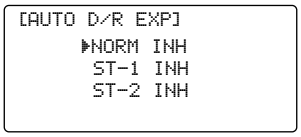
Function Mode Flowchart

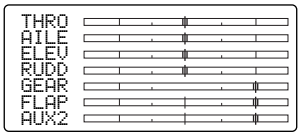
Includes programming functions that are more frequently used. Function Mode programming functions include:

Dual Rate & Exponential (Pg 79)



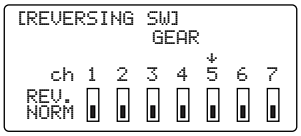
Auto Dual Rate Expo (Pg 81)

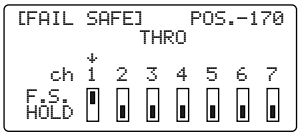




Servo Monitor (Pg 96)

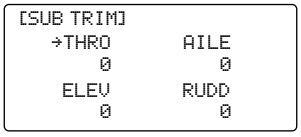
Reverse (Pg 82)

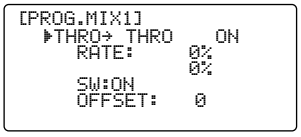




Fail Safe (Pg 95)

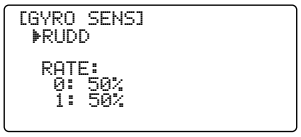
Sub Trim (Pg 83)





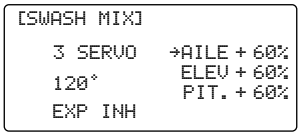
Programmable Mix (1 though 3) (Pg 92)

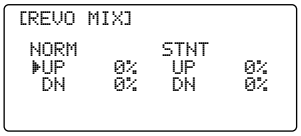
Travel Adjust (Pg 84)



Gyro Sensing (Pg 91)

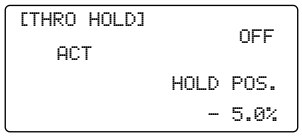
Swashplate Mix (Pg 85)

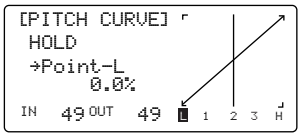




Revo Mix (Pg 90)

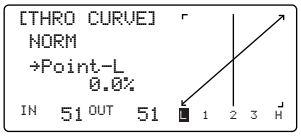
Throttle Hold (Pg 86)

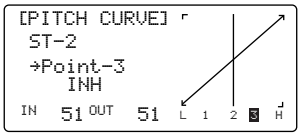




Pitch Curve Hold (only available when HOLD is activated) (Pg 89)

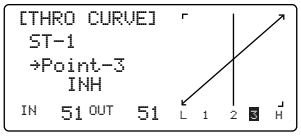
Throttle Curve Normal (Pg 87)

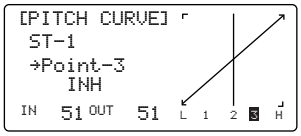




Pitch ST-2 (Pg 89)

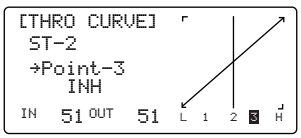
Throttle Curve ST-1 (Pg 87)

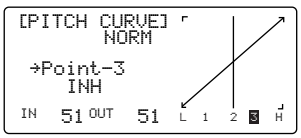




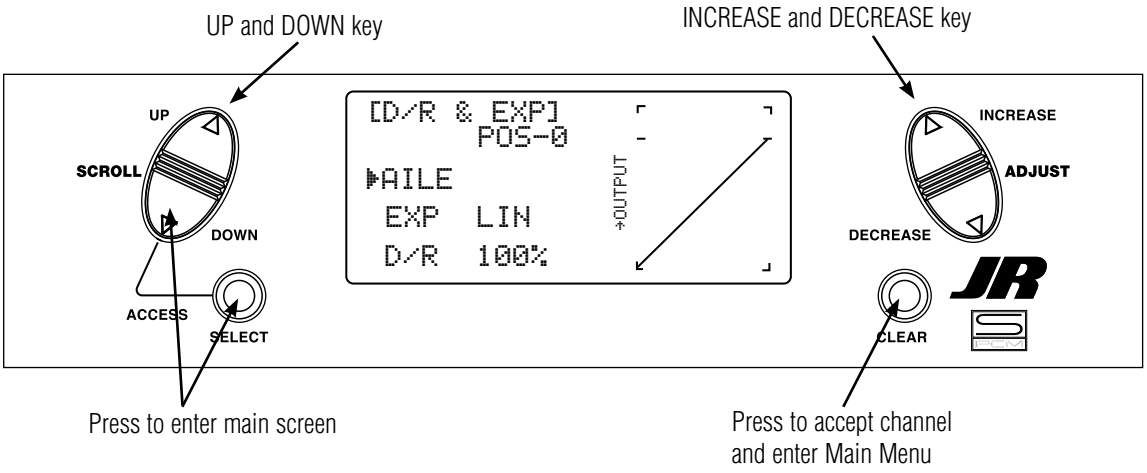
Pitch Curve ST-1 (Pg 89)

Throttle Curve ST-2 (Pg 87)





Pitch Curve Normal (Pg 89)



To Enter the Function Mode

- Turn the transmitter on.
- Press the *CLEAR* key to accept the channel displayed and to access the main screen.
- From the main screen press the *DOWN* and *SELECT* keys simultaneously.
- The system is now in Function Mode and will display the last screen that was used in Function Mode.

To Exit the Function Mode

- Press the *DOWN* and *SELECT* keys simultaneously. The system will return to the main screen.

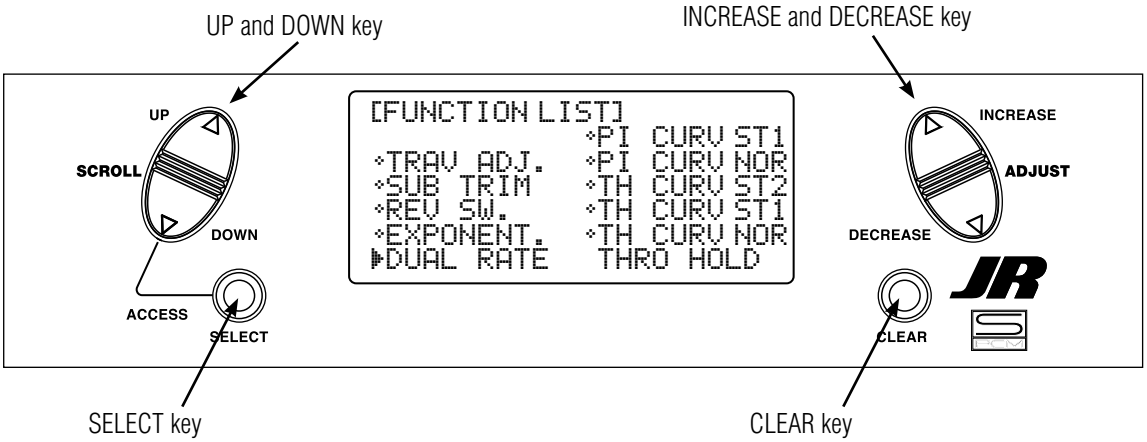
List Modes

The list mode screens display all the functions onscreen, allowing the access of any function without having to scroll through each screen. Note that there are two list modes: a System Setup list mode that displays all the system setup functions and a Function list mode that displays all the system programming functions.

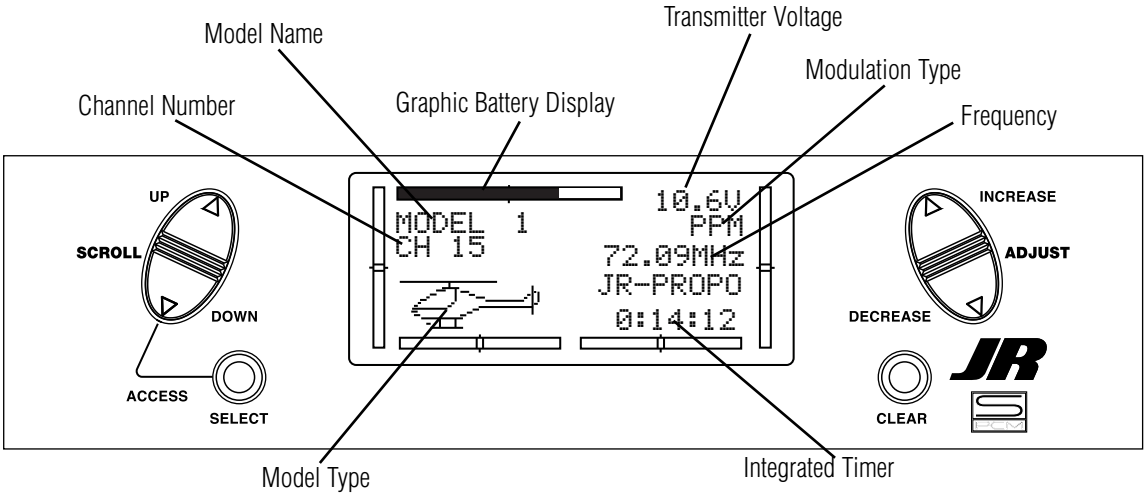
To enter the System Setup List Mode, with the system on and in any System Setup function, press the *UP* and *SELECT* keys simultaneously.

To enter the Function List mode, with the system on and in any Function mode screen, press the *UP* and *SELECT* keys simultaneously.

In either list mode, pressing the *UP* and *DOWN* keys will move the cursor to the desired function. Then pressing the *DOWN* and *SELECT* key simultaneously will access the selected function.



Normal Display



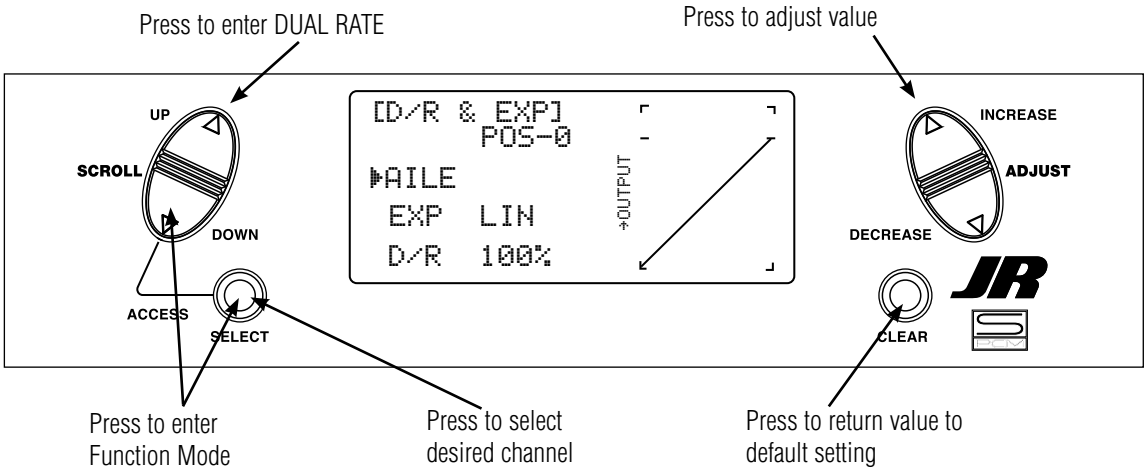
Section 7.2: Function Mode Functions

Dual Rate & Exponential

The Dual Rate function allows two control rates (control throws) to be programmed and selected with a switch. Dual rates are available on the aileron, elevator and rudder channels. Changing the dual rate value not only affects the maximum control authority but also affects the overall sensitivity of control. A higher rate yields a higher overall sensitivity. The sensitivity around center can be tailored using the Exponential function to precisely adjust control feel.

Dual rates can be controlled by their respective dual rate switches (aileron, elevator and rudder). An auto dual rate function is available that allows to automatic selection of the desired rates via the three position flight-mode switch.

Dual rates are available for the aileron, elevator and rudder channels. Dual rate values are adjustable from 0-125%. The factory default settings for both the 0 and 1 switch positions are 100%. Either switch position may be selected as the low or high rate by placing the switch in the desired position and adjusting the value accordingly.



To Adjust the Dual Rate

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* keys to select the **D/R & EXP** screen.

Press the *INCREASE* or *DECREASE* key to select the desired channel (**AILE**, **ELEV** or **RUDD**).

Press the *SELECT* key to highlight the **D/R** function

Adjust the dual rate values for the selected switch position using the *INCREASE* or *DECREASE* keys.

The Dual Rate and Expo functions for aileron, elevator and rudder can be combined on a single switch conveniently allowing high or low rates to be selected Via one switch.

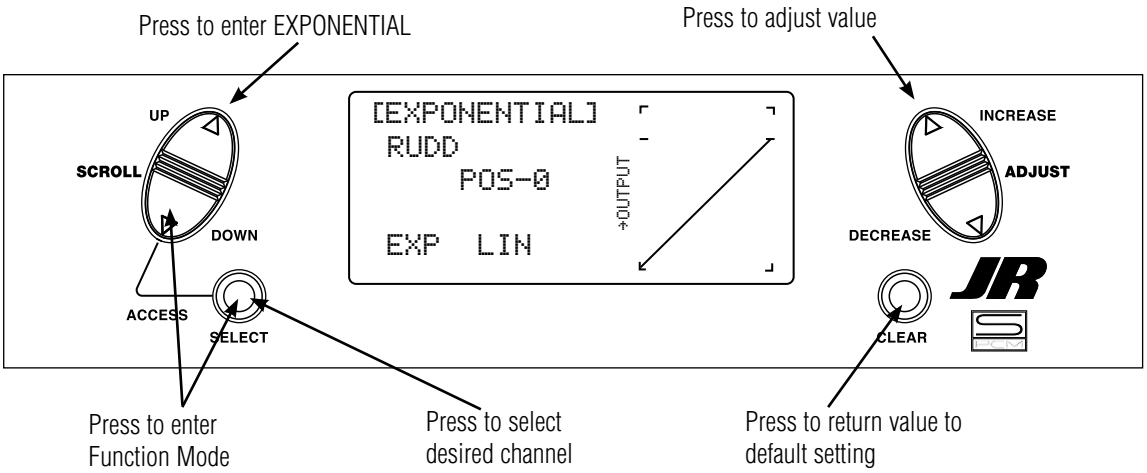
Dual Rate & Exponential (continued)

The Exponential function allows two exponential rates to be programmed and selected with a switch. Exponential is available on the aileron, elevator and rudder channels. Changing the exponential value does not affect the maximum control authority but only affects control sensitivity. Exponential is normally used to reduce control sensitivity around neutral while still allowing high control authority at the extremes of throw. The sensitivity around center can be tailored using the Exponential function to precisely adjust control feel.

Exponential rates can be controlled by their respective rate switches (aileron, elevator and rudder), or combined on a single switch, see D/R Switch Select Page 45.

Exponential is available for the aileron, elevator and rudder channels. Expo values are adjustable from –100% - LIN - +100%. The factory default settings for both the 0 and 1 switch positions are LIN or 0%. Either switch position may be selected to give any desirable EXPO rate by placing the switch in the desired position and adjusting the value accordingly.

NOTE: A negative (-) Expo value will increase sensitivity around neutral, and a positive (+) Expo value will decrease sensitivity around neutral.



To Adjust the Exponential

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* keys to select the **DUAL RATE** and **EXPONENTIAL** screen.

Press the *INCREASE* or *DECREASE* key to select the desired channel (**AILE**, **ELEV** or **RUDD**)

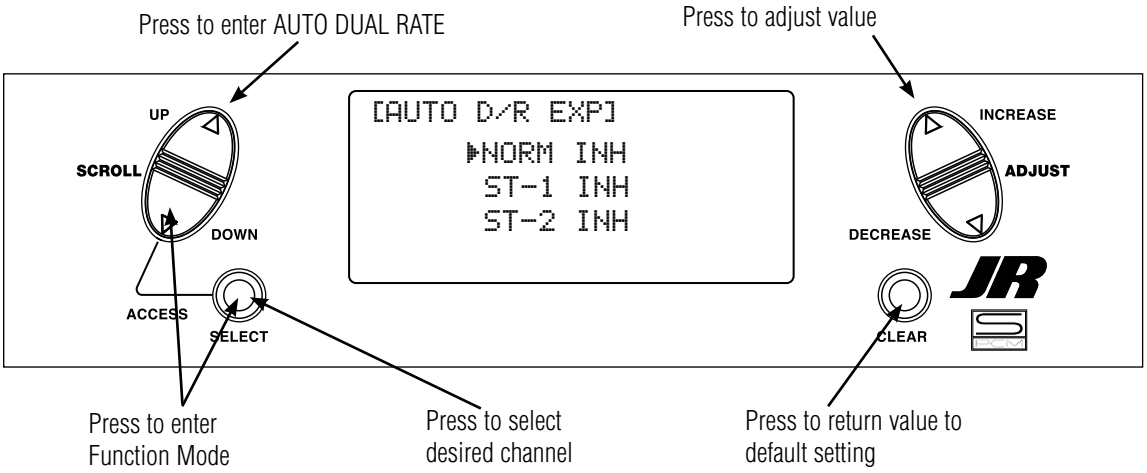
Move the selected channel's dual rate switch to the desired position, 0 or 1.

Press the *SELECT* key until **EXP** is highlighted

Adjust the Expo rate values for the selected switch position using the *INCREASE* or *DECREASE* keys.

Auto Dual Rate EXP

The Auto Dual Rate and Expo function allows Expo and Dual Rate values (aileron, elevator and rudder) to be automatically selected in each flight mode (Normal, ST1, ST2, and Hold. When an auto dual rate flight mode is inhibited, the dual rate is defaulted to correlating switch or the dual rate switch positions.



To Adjust the Auto Dual Rate

Press the *DOWN* and *SELECT* key simultaneously to access the Function Mode.

Press the *UP* or *DOWN* key until the **AUTO D/R EXP** screen appears on screen.

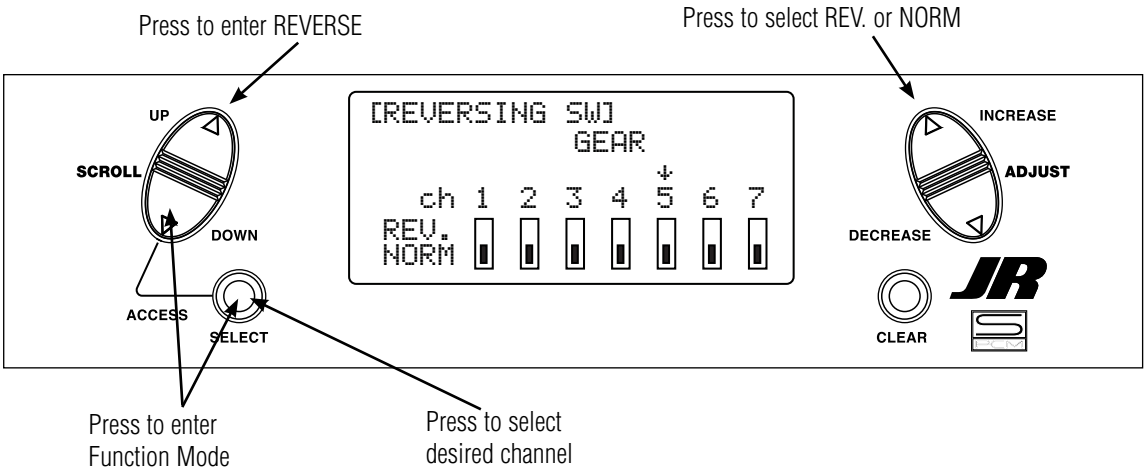
Use the *SELECT* key to select **NORMAL**, **ST1 ST2** or **HOLD FLIGHT** mode.

When selected, press the *INCREASE* or *DECREASE* key to select **DUAL RATE**, **P-1**, **P-2** or **INHIBIT**.

NOTE: The actual dual rate values are set in the Dual Rate and Expo screen. See Page 85.

Reverse Switch

The Reverse Switch function allows electronic means of reversing the servo's throw. Servo reversing is available for all seven channels.



Accessing the Reverse Switch Function

Press the *SELECT* key to access the desired channel

Press the *INCREASE* or *DECREASE* keys to reverse the servo direction for that selected channel.

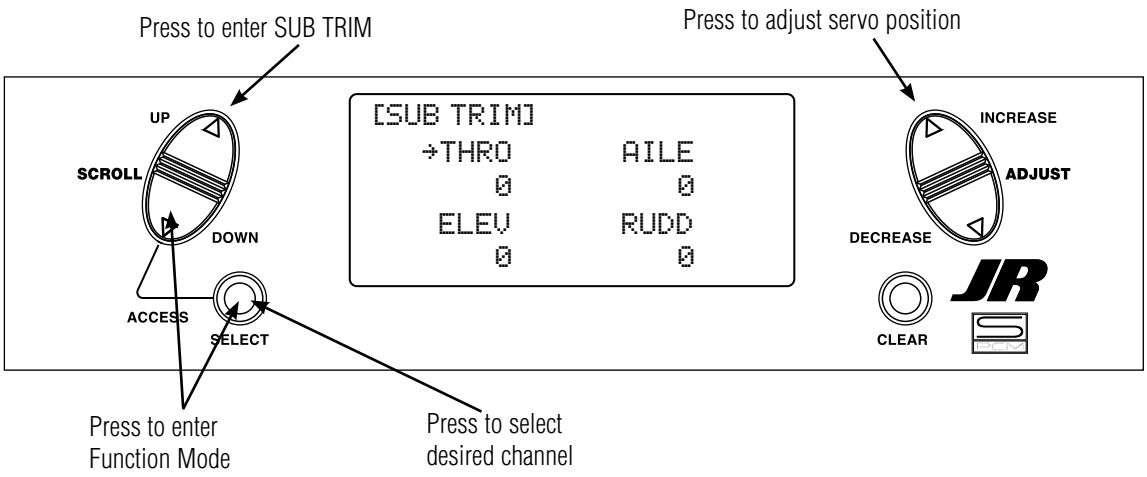
THRO Throttle AILE Aileron ELEV Elevator RUDD Rudder
GEAR gyro gain, PIT. pitch (Aux1) gyro gain

Sub-Trim

The Sub-Trim function allows you to electronically adjust the centering of each servo. Sub-trim is individually adjustable for all seven channels, with a range of + or - 125% (+ or – 30 degrees servo travel).

CAUTION: Do not use excessive sub-trim values as it is possible to overdrive the servo's maximum travel.

Sub-trim value (max ±125)



To Access the Sub-Trim Function

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

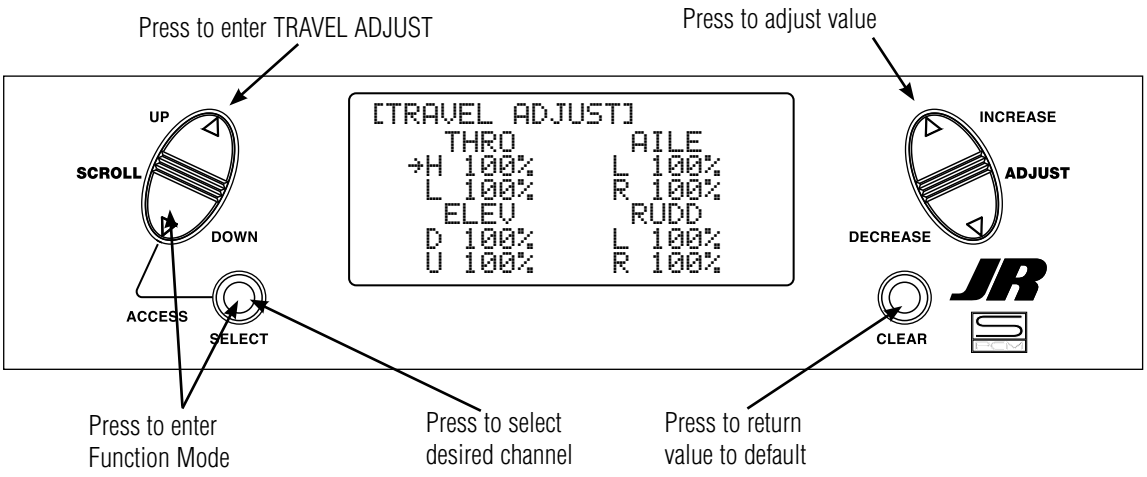
In Function Mode, use the *UP* or *DOWN* key to select the **SUB TRIM** screen.

Press the *SELECT* key to access the desired channel

Press the *INCREASE* or *DECREASE* keys to adjust the sub-trim position for that selected channel.

Travel Adjust

The Travel Adjust function allows the precise end point adjustments of all seven channels in each direction independently. The travel adjust range is from 0-150%.



To Access the Travel Adjust Function

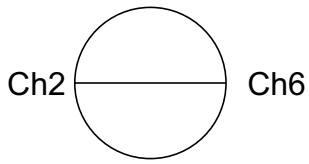
Press the *SELECT* key to access the desired channel

Move the selected channel's Stick or switch in the desired direction that you wish to adjust.

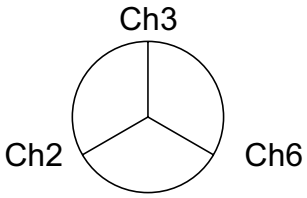
Press the *INCREASE* or *DECREASE* keys to adjust the sub trim position for that selected channel's direction.

Swashplate Mixing

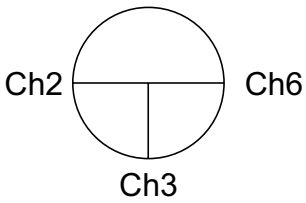
The swashplate Mix screen is only displayed when a CCPM swashplate mix is activated is Swash Type (see Page 74) Swashplate Mix adjust the amount and direction of travel for the aileron, elevator and pitch functions. For example if more aileron travel is desired increasing the aileron swashplate mix value will increase the overall travel of the servos necessary to achieve greater aileron throw. Note that negative values are available which will reverse the direction of that function.



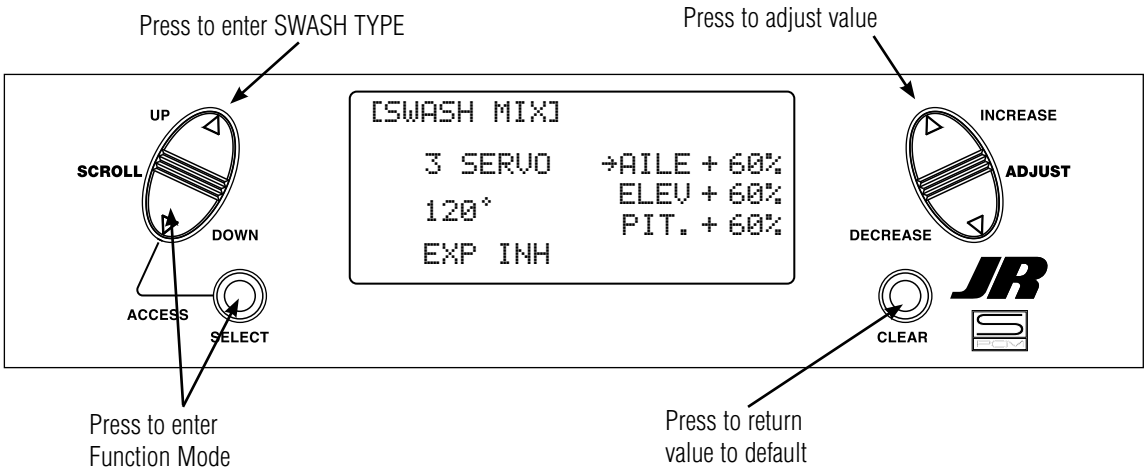
2 Servo/ 180 CCPM



3 Servo/120 CCPM
(JR style, most popular)



3 Servo/90 CCPM



Accessing the Swashplate Mix Function

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode.

In function mode press the *UP* or *DOWN* key to select the **SWASH MIX** screen

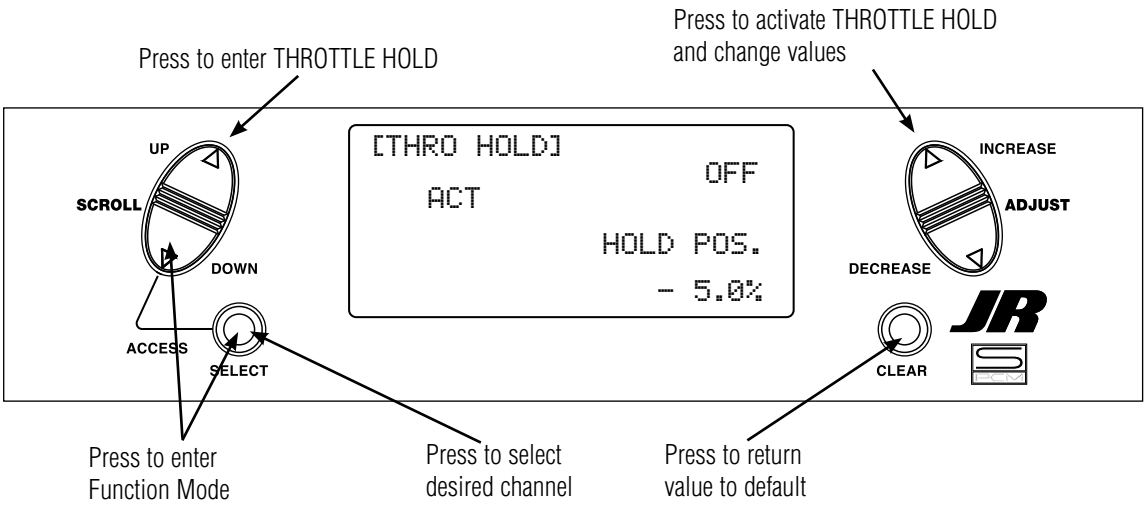
Press the *SELECT* key to access the desired function (aileron, elevator, pitch or expo)

Press the *INCREASE* or *DECREASE* key to change the selected swashplate mix value.

NOTE: Selecting a negative value will reverse the direction of the function.

Throttle Hold

The Throttle Hold function is used to practice autorotation with glow/gas powered helicopters and is often use as a safety switch for electric helicopters holding the throttle in the off position. When the throttle hold switch is activated the throttle hold function holds the throttle servo/ ESC in a specific position (normally low or off throttle) while all other servos function normally.



To Access the Throttle Hold Function

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* key to select the **THRO HOLD** screen.

Press the *INCREASE* or *DECREASE* key to activate the throttle hold function

When activated press the *INCREASE* or *DECREASE* key to change the throttle hold value.

Move the selected channel's Stick or switch in the desired direction that you wish to adjust.

Press the *INCREASE* or *DECREASE* keys to adjust the sub-trim position for that selected channel's direction.

Throttle Curve

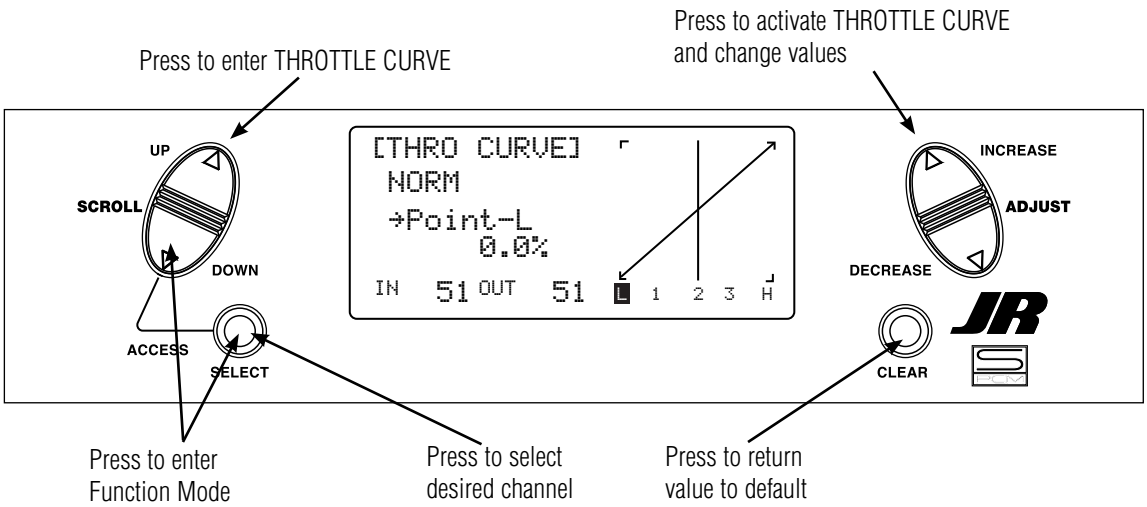
The XP7202 offers three (3) separate throttle curves with five (5) adjustable points per curve. This function allows you to customize the throttle curve and pitch curve together to maximize engine performance at a particular pitch setting. Once the throttle curves are established, each can be activated in flight using the three (3) position flight mode switch. The flight mode switch offers three (3) selectable curves. N=Normal, 1=Stunt 1, 2=Stunt 2

The N, or Normal, position should be used for hovering. Positions 1 and 2, or Stunt 1 and Stunt 2, should be used for aerobatic maneuvers and forward flight.

NOTE: The throttle trim and hovering throttle lever are only operable when the flight mode switch is in the Normal position. Thus, in the 1 or 2 positions, these two functions have no effect.

Each of the five (5) positions of the throttle curve are independently adjustable from 0 -100%. These five (5) positions correspond to the position of the throttle stick.

The transmitter is factory preset to the throttle curve as indicated by the solid line in the figure below. Individual middle points can be activated and increased/decreased to suit your specific needs.



Throttle Trim Setting

The throttle trim lever is only active when the flight mode switch is in the normal position. The throttle trim is used to increase or decrease the engine rpm to achieve a reliable idle when in the Normal Mode. The throttle trim lever has no effect at position 1, 2, Stunt 1 or Stunt 2, or throttle hold.

Hovering Throttle Rocker Setting

The hovering throttle rocker increases or decreases the engine output power for either the center point only (point #2), of the throttle curve. Use of the hovering throttle rocker shifts the middle curve upward or downward. Therefore, operation of the hovering throttle rocker does not cause any change to the high point and low point of the throttle curve but only affect the hovering rpm.

Exponential Throttle Curve Function

With the XP7202 system, individual throttle curves are selectable to be either straight (linear) or curved (exponential). To select an exponential curve, press the *SELECT* key until EXP OFF appears on the throttle curve screen. Next press either the *INCREASE* or *DECREASE* key to activate the exponential feature (an "on" will replace the "off" on the screen). With the exponential function ON, you will notice that any "sharp" angles of the throttle curve will become more "rounded" or "smooth," creating a more equal throttle servo movement during the entire throttle curve range.

Idle Up

Normally, flight mode 1 and 2 are used to increase engine rpm below half stick for forward flight maneuvers (idle up), and at this time any other trims are not active as the throttle will only operate/follow the current throttle curve values.

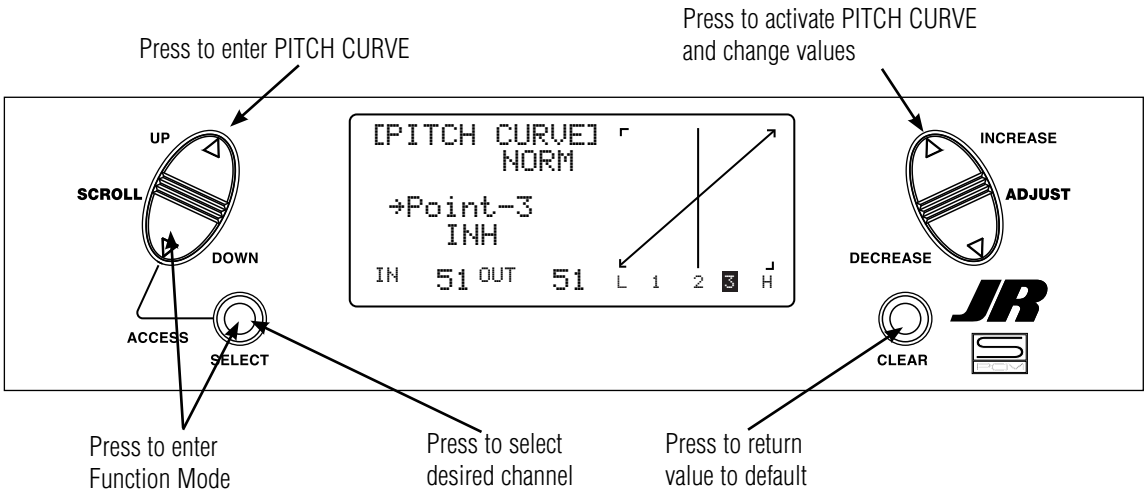
Pitch Curve

Adjustment of the pitch curve is very similar to the throttle curve adjustment described in the preceding section. A thorough understanding of the throttle curve section will make pitch curve adjustment easier to understand.

The XP7202 offers four (4) independent types of pitch curves: Normal, Stunt 1, Stunt 2 and Hold. E ach pitch curve contains five (5) adjustable points — L, 1, 2, 3, and H.

> **NOTE**: When setting pitch curve for throttle hold, it is necessary for the throttle hold to be active — if this function is inhibited, the throttle hold pitch curve will not be visible on the screen.

In the Function Mode, use the UP and Down keys to select Pitch Curve.



Hovering Pitch Rocker

The hovering pitch rocker operates in the same manner as the hovering throttle rocker. It is operable while the flight mode is in the N, or Normal, position, and its function is to shift either the center point only (#2) or the middle three (3) points (if activated) of the curve either upward or downward to adjust rotor rpm at the hover position.

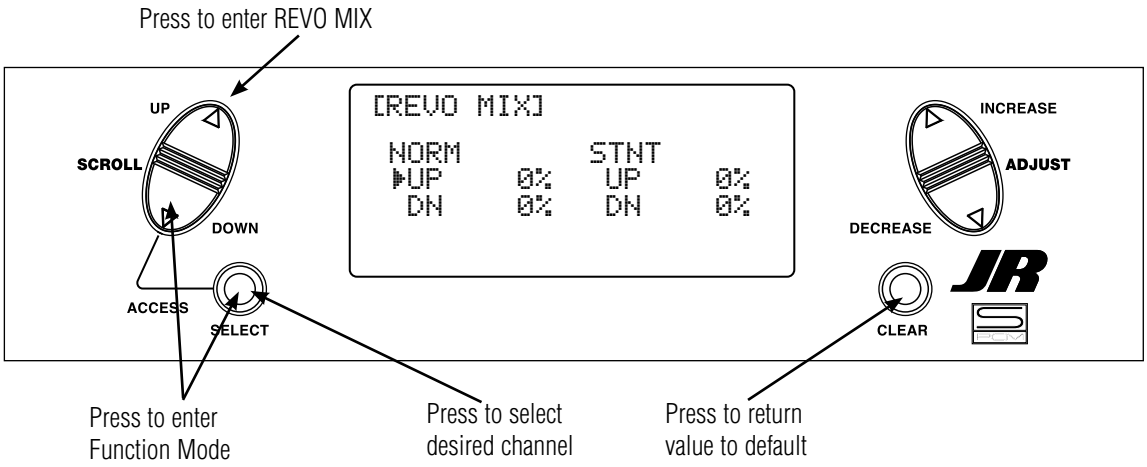
Pitch Trim rocker

The pitch trim rocker is a trimmer for the pitch channel. This rocker should be set to 0, and all changes upward or downward should be made from this neutral point. This function is used to adjust the main rotor speed (rpm) at mid stick in normal mode. If the pitch curve is set properly, only small trim adjustments will be required.

Revolution Mixing (only used with non heading hold gyros)

The Revolution Mixing Function mixes tail rotor input with the Throttle/Collective Function to counteract torque from the main rotor blades. When set-up correctly, the helicopter should climb and descend without a tendency to yaw in either direction. Because torque reaction varies with different power settings, it is necessary to vary the tail rotor pitch at the same time. The XP7202 offers two (2) separate revolution mixing programs with independent up and down mixing for each — one for flight mode position N and the other for Stunt 1 and Stunt 2 positions. The U, or Up, mixing adjusts the tail rotor compensation for the mid to high throttle/stick setting, and the D, or Down, mixing adjusts the tail rotor compensation for the mid to low throttle/stick setting.

In the Function Mode, use the *UP* or *DOWN* keys to select Revolution Mixing screen.



Setting Up Revolution Mixing

First, adjust the helicopter so that it will hover in a neutral position with the tail rotor trim at center. Next, establish the helicopter into a stable hover; then steadily increase the throttle to initiate a stable climb. The body of the helicopter will move in the opposite direction to the main rotor rotation. Increase the U, or Up, setting until the helicopter will climb with no tendency to turn or rotate. At a safe altitude, close the throttle and the helicopter will descend with the body turning in the same direction as the main rotor. Increase the D, or Down, mix until the helicopter descends with no tendency to turn or rotate. When attempting this procedure, throttle stick movements should be slow, and the initial acceleration and deceleration swings should be overlooked.

Gyro Sensing

The XP7202 offers two different types of Gyro Sensitivity Adjustments — manual or automatic. This feature gives the user the choice of selecting gyro sensitivity manually through the rudder dual rate switch or automatically through the flight mode switch.

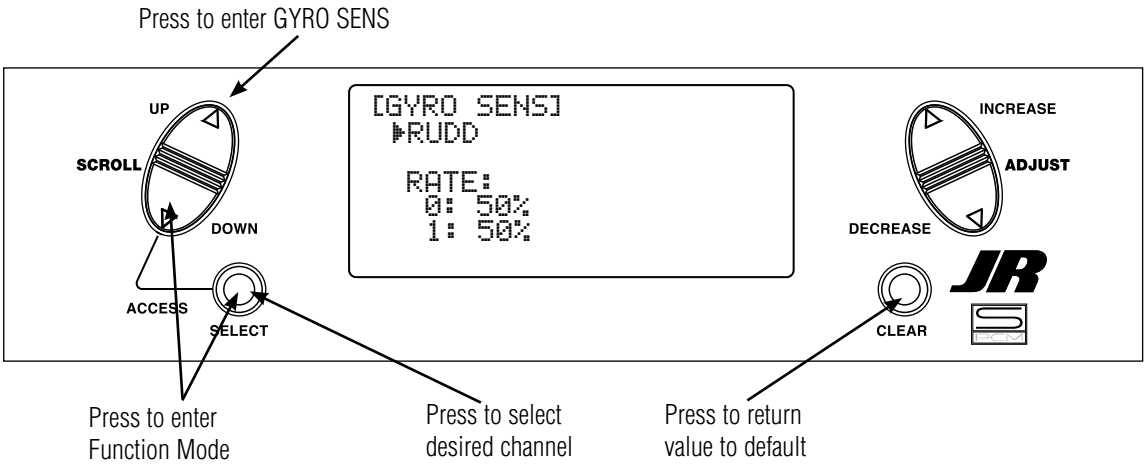
In function mode press the *UP* or *DOWN* key until **GYRO SENS** screen appears on the screen.

Use the *SELECT* key to highlight the desired rate or flight mode.

Press the *INCREASE* or *DECREASE* key to change the rate value or the select position 0 or 1 for each flight mode.

Manual Gyro Sensitivity Adjustment

Manual Gyro Sensitivity Adjustment allows the pilot to select from two different gyro sensitivities during all flight conditions. This function is activated in conjunction with the rudder dual rate switch.



Automatic Gyro Sensitivity Adjustment

The Automatic Gyro Sensitivity Adjustment feature allows the pilot to automatically alter the sensitivity of the gyro from either of two pre-determined settings through the use of the flight mode switch. As different flight modes are selected (Normal, 1, 2, Hold), the Gyro's sensitivity rate will switch to the pre-determined compensation rate for each particular flight mode in use.

Programmable Mixing 1-3

In helicopter mode the XP7202 offers three (3) programmable mixes that allow stick or switch inputs to control the output of two or more servos. This function allows mixing any one channel to any other channel or the ability to mix a channel to itself. The mix can remain ON at all times, or be switched OFF in flight using a number of different switches. (Refer to chart at right.) Mix values are adjustable from 0 to 125%. Each channel is identified by a four character name (i.e., Aileron - AILE, Elevator - ELEV, etc.). The channel appearing first is the master channel. The second channel is the slave channel. For example, AILE - ELEV would indicate aileron to elevator mixing. Each time the aileron stick is moved, the elevator will deflect, and the elevator will automatically move in the direction and to the position based on the value input in the programmable mix screen. Mixing is proportional, so small inputs of the master channel will produce small outputs of the slave channel. Each programmable mix has a mixing offset. The purpose of the mixing offset is to redefine the neutral position of the slave channel.

ON: Mixing Always On

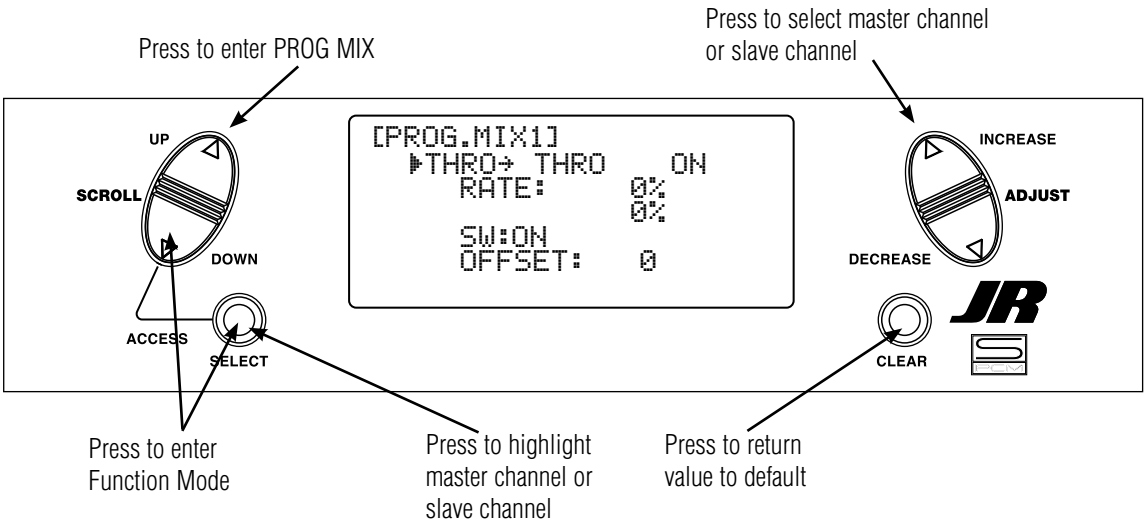
F-NR: Flight mode normal

F-S12: Stunt modes 1 and 2

F-S2: Stunt mode 2

HOLD: Throttle hole toward self

GEAR: Gear channel toward self



Assigning Channels

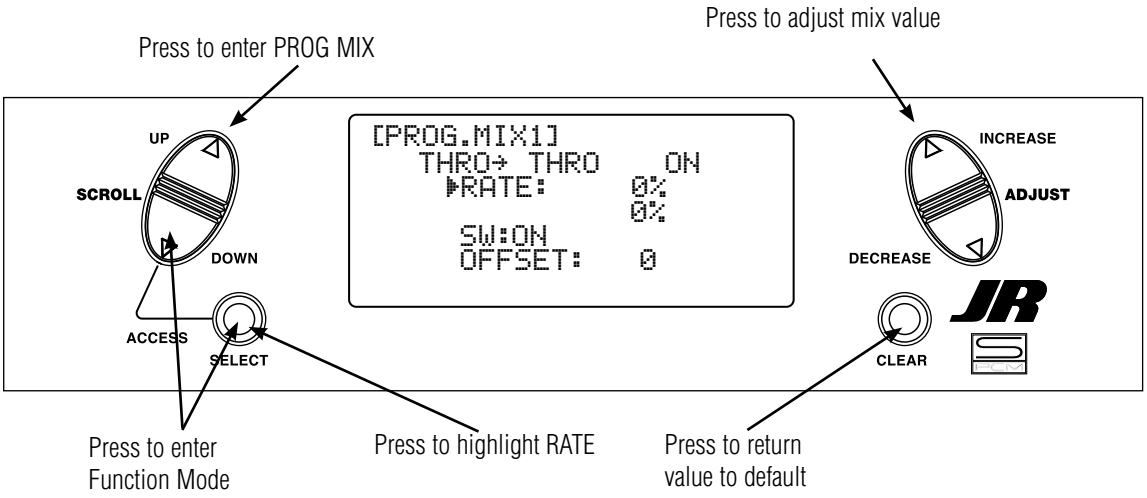
Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode.

In Function Mode, use the *UP* or *DOWN* keys to select the desired **PROG. MIX** screen. (1-3). Press the *INCREASE* or *DECREASE* button to access the Programmable Mix function.

Press the *INCREASE* or *DECREASE* keys to select the desired master channel.

Press the *SELECT* key to highlight the slave channel.

Press the *INCREASE* or *DECREASE* keys to select the desired slave channel.



Assigning Mixing Values

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* keys to select the desired **PROG. MIX** screen. (1-3)

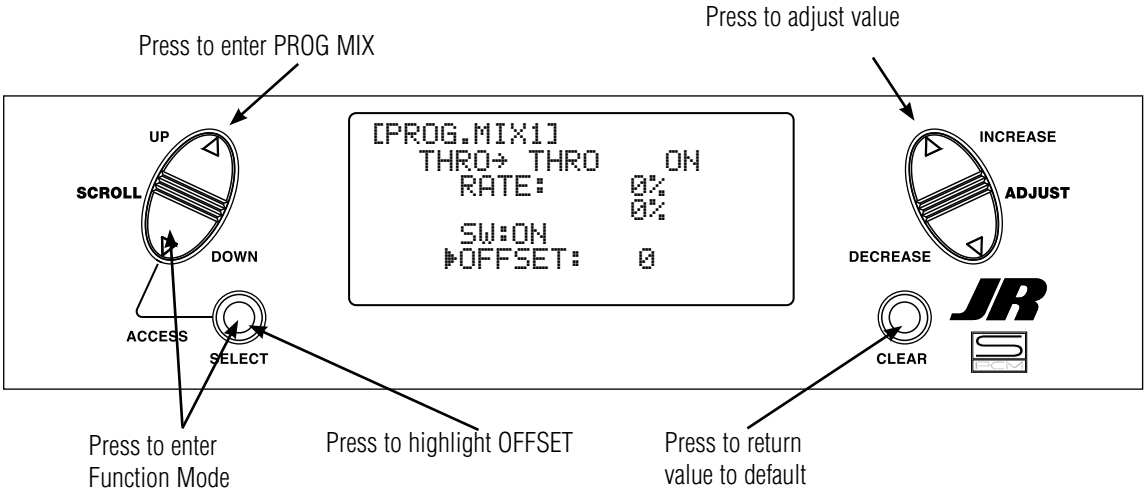
Press the *SELECT* key to highlight **RATE**

Using the stick or switch that is assigned to the master channel, move that stick or switch in the desired direction that you wish to adjust the mix value.

Press the *INCREASE* or *DECREASE* keys to adjust the mix value.

> **NOTE**: If a switch is assigned to the mix that switch must be turned on to allow mixing values to be changed.

Moving the stick or switch in the opposite direction will allow the mix value to be adjusted in the opposite direction.



Assigning an Offset

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* keys to select the desired **PROG. MIX** screen. (1-3)

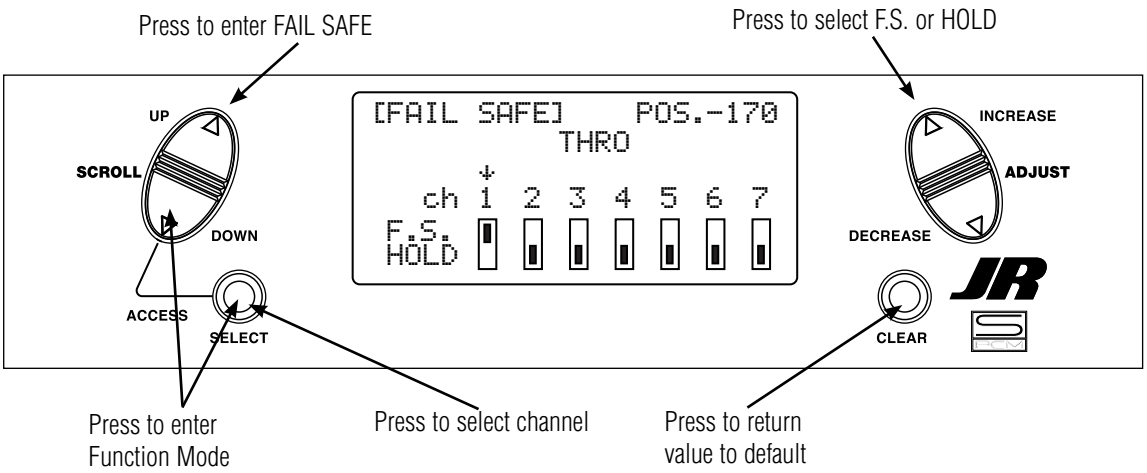
Press the *SELECT* key to highlight **OFFSET**

Move the master channel's stick to the desired offset position and press the *CLEAR* key to store that offset value. The stored offset value will appear onscreen.

To change the offset value simply move the master channel's stick the desired position and press the *CLEAR* button.

Fail-Safe

The Fail-Safe/Hold Function is available only when you use PCM modulations (see modulation page 77) Durning loss of signal this function drives the servos to either the fail-safe preset positions or hold the last signal position. As noted, if you are in the PPM modulation, the Fail-Safe/Hold Function is not applicable. Therefore, the Fail-Safe/Hold Function will not appear on your LCD in PPM mode. Refer to the Modulation Selection Section for more information.



Accessing the Fail-Safe Function

Press the *DOWN* and *SELECT* keys simultaneously to access the Function Mode

In Function Mode, use the *UP* or *DOWN* keys to select the **FAIL SAFE** screen.

Press the *SELECT* key to highlight the desired channel

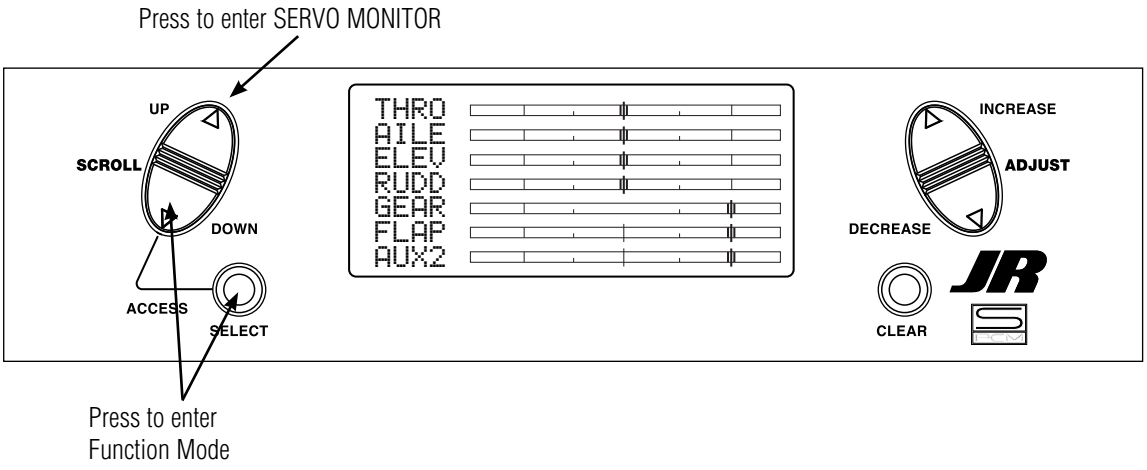
Press the *INCREASE* or *DECREASE* keys to select **FAILSAFE** (the servo goes to a preset programmed position during signal loss) or **HOLD** (the servo holds last position during signal loss.

With the sticks and switches in the desired fail safe positions, press the *CLEAR* key to store these failsafe position in memory.

NOTE: To test the fail-safe turn the transmitter off. Any channel that is set to a fail-safe position should drive to that position and any servo that is set to hold should remain in it's last good position.

Servo Monitor

The servo monitor screen serves as a useful tool when programming your radio. It displays servo movement and direction when different programming functions, sticks and/or switches are moved.



DATA SHEET – HELI

MODEL NAME _____

MODEL NUMBER _____

	THRO	AILE	ELEV	RUDD	GEAR	PITCH	AUX2
REVERSE SW	R • N	R • N	R • N	R • N	R • N	R • N	R • N
SUB TRIM							
TRAVEL ADJUST	H %	L %	U %	L %	+ %	H %	H %
	L %	R %	D %	R %	– %	L %	L %
FAIL SAFE (PCM)							

THROTTLE CURVE		P-LOW	P-1	P-MID	P-3	P-HIGH
	NORMAL					
	STUNT 1					
	STUNT 2					

THROTTLE HOLD	ON • OFF	POSITION

PITCH CURVE		P-LOW	P-1	P-MID	P-3	P-HIGH
	NORMAL					
	STUNT 1					
	STUNT 2					

MODULATION
PPM • SPCM

SWASH TYPE	NORMAL	90 CCPM	120 CCPM	180 CCPM

	AILE	ELEV	PITCH
SWASH MIX	%	%	%
	REV R•N	REV R•N	REV R•N

SWITCH SELECT	D/R	
	GEAR	
	FL-M	

		CHANNEL	SW	+POS	–POS	OFFSET
PROGRAM MIX	MIX 1	–		%	%	
	MIX 2	–		%	%	
	MIX 3	–		%	%	

			AILE	ELEV	RUDD
DUAL RATE • EXPO	0	D/R	%	%	%
		EXP	%	%	%
	1	D/R	%	%	%
		EXP	%	%	%

REVO MIX			
	NORMAL	UP	%
		DOWN	%
	STUNT	UP	%
		DOWN	%

NOTES:

Section 8: General Information

Servo Precautions

- Do not lubricate servo gears or motors.
- Do not overload retract servos during retracted or extended conditions.
  Make sure they are able to travel their full deflection. Overloading or stalling a servo can cause excessive current drain and cause damage to your servo voiding the warranty.
- Make sure all servos move freely through their rotations and no linkages hang up or bind. A binding control linkage can cause a servo to draw excessive current. A stalled servo can drain a battery pack in a matter of minutes.
- Correct any control surface "buzz" or "flutter" as soon as it is noticed in flight, as this condition can destroy the feedback potentiometer in the servo. It may be extremely dangerous to ignore such "buzz" or "flutter."
- Use the supplied rubber grommets and brass servo eyelets when mounting your servos. Do not over-tighten the servo mounting screws, as this negates the dampening effect of the rubber grommets.
- Ensure the servo horn is securely fastened to the servo. Use only the JR® servo arm screws provided; the size is different from other manufacturers.
- Discontinue to use servo arms when they become "yellowed" or discolored. Such servo arms may be brittle and can snap at any time, possibly causing the aircraft to crash.
- Check all related mounting screws and linkages frequently. Aircraft often vibrate, causing linkages and screws to loosen.

General Notes

Radio controlled models are a great source of pleasure. Unfortunately, they can also pose a potential hazard if not operated and maintained properly.

It is imperative to install your radio control system correctly. Additionally, your level of piloting competency must be high enough to ensure that you are able to control your aircraft under all conditions. If you are a newcomer to radio controlled flying, please seek help from an experienced pilot or your local hobby shop.

Safety Do's and Don'ts for Pilots

- Ensure your batteries have been properly charged prior to initial flight.
- Keep track of the time the system is turned on so you will know how long you can safely operate your system.
- Perform a ground range check prior to the initial flight of the day. See the "Daily Flight Checks Section" for information.
- Check all control surfaces prior to each takeoff.
- Use frequency flags.
- Do not fly your model near spectators, parking areas or any other area that could result in injury to people or damage of property.
- Do not fly during adverse weather conditions. Poor visibility can cause disorientation and loss of control of your aircraft. Strong winds can cause similar problems.
- Do not fly unless your frequency is clear.

WARNING: Only one transmitter at a time can operate on a given frequency. If you turn on your transmitter while someone else is operating a model on your frequency, both pilots will lose control of their models. Only one person can use a given frequency at a time. It does not matter if it is AM, FM or PCM—only one frequency at a time.

- Do not point the transmitter antenna directly toward the model. The radiation pattern from the tip of the antenna is inherently low.
- Do not take chances. If at any time during flight you observe any erratic or abnormal operation, land immediately and do not resume flight until the cause of the problem has been ascertained and corrected. Safety can never be taken lightly.

Federal Aviation Administration

Purpose

This advisory outlines safety standards for operations of model aircraft. We encourage voluntary compliance with these standards.

Background

Attention has been drawn to the increase in model aircraft operation. There is a need for added caution when operating free flight and radio controlled craft in order to avoid creating a noise nuisance or a potential hazard to full-scale aircraft and persons and/or property on the surface.

Operating Standards

Modelers generally are concerned with safety and exercise good judgment when flying model aircraft. However, in the interest of safer skies, we encourage operators of radio controlled and free flight models to comply with the following standards:

a. Exercise vigilance in locating full-scale aircraft (get help if possible) so as not to create a collision hazard.

b. Select an operating site at sufficient distance from populated areas so you do not create a noise problem or a potential hazard.

c. Do not fly higher than 400 feet above the surface.

d. Always operate more than three miles from the boundary of an airport unless you are given permission to be closer by the appropriate air traffic control facility in the case of an airport for which a control zone has been designated or by the airport manager in the case of other airports.

e. Do not hesitate to ask for assistance in complying with these guidelines at the airport traffic control tower or air route traffic control center nearest the site of your proposed operation.

Information Provided By:
Director, Air Traffic Service Federal Aviation Administration, Washington, D.C.

Daily Flight Checks

1. Check the battery voltage on both the transmitter and the receiver battery packs. Do not fly below 9.0V on the transmitter or below 4.7V on the receiver. To do so can crash your aircraft.

   NOTE: The transmitter voltage reading has a load to ensure the voltage reading is accurate. Use a voltmeter that will place a load on the receiver pack to ensure the voltage reading is accurate.

   NOTE: When checking the receiver batteries, ensure that you have the polarities correct on your expanded scale voltmeter.

2. Check all hardware (linkages, screws, nuts, and bolts) prior to each day's flight. Be sure that binding does not occur and that all parts are is properly secured.
3. Ensure that all surfaces are moving in the proper manner.
4. Perform a ground range check before each day's flying session. The range check should be as follows:
   - Do not extend the transmitter antenna at this time. Turn the transmitter "on."
   - Turn the model "on."
   - Slowly walk away from the model while moving the control surfaces. The aircraft should function properly at a distance of 60–75 feet.
   - For PCM Only: With the throttle fail-safe preset to idle, bring the throttle slightly above idle. Walk away until the throttle drops to idle. This will be the distance of the range check.
5. Prior to starting your aircraft, turn off your transmitter, then turn it back on. Do this each time you start your aircraft. If any critical switches are on without your knowledge, the transmitter alarm will warn you at this time.
6. Check that all trim levers are in the proper location.
7. All servo pigtails and switch harness plugs should be secured in the receiver. Make sure that the switch harness moves freely in both directions.

Frequency Chart

72 MHz requires no special license to operate.

Low Band 72 MHz	
Ch.No.	**Frequency**
11	72.010
12	72.030
13	72.050
14	72.070
15	72.090
16	72.110
17	72.130
18	72.150
19	72.170
20	72.190
21	72.210
22	72.230
23	72.250
24	72.270
25	72.290
26	72.310
27	72.330
28	72.350
29	72.370
30	72.390
31	72.410
32	72.430
33	72.450
34	72.470
35	72.490

High Band 72 MHz	
Ch.No.	**Frequency**
36	72.510
37	72.530
38	72.550
39	72.570
40	72.590
41	72.610
42	72.630
43	72.650
44	72.670
45	72.690
46	72.710
47	72.730
48	72.750
49	72.770
50	72.790
51	72.810
52	72.830
53	72.850
54	72.870
55	72.890
56	72.910
57	72.930
58	72.950
59	72.970
60	72.990

Transmitter Crystal Replacement Notice:

The Federal Communications Commission (FCC) requires that changes in transmitter frequency must be performed only by an authorized service technician (Horizon Service Center).

Any transmitter frequency changes made by a non-certified technician may result in a violation of FCC rules.

Channels 12–14 are not available through JR®.

Section 9: Warranty Information

Limited Warranty Period

Horizon Hobby, Inc. guarantees this product to be free from defects in both material and workmanship for a period of 3 years from the date of purchase.

Limited Warranty & Limits of Liability

Pursuant to this Limited Warranty, Horizon Hobby, Inc. will, at its option, (i) repair or (ii) replace, any product determined by Horizon Hobby, Inc. to be defective. In the event of a defect, these are your exclusive remedies.

This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than an authorized Horizon Hobby, Inc. service center. This warranty is limited to the original purchaser and is not transferable. In no case shall Horizon Hobby's liability exceed the original cost of the purchased product and will not cover consequential, incidental or collateral damage. Horizon Hobby, Inc. reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon Hobby, Inc. Further, Horizon Hobby reserves the right to change or modify this warranty without notice.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. HORIZON HOBBY, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

As Horizon Hobby, Inc. has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

If you as the purchaser or user are not prepared to accept the liability associated with the use of this product, you are advised to return this product immediately in new and unused condition to the place of purchase.

Safety Precautions

This is a sophisticated hobby product and not a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision.

The product manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or injury.

Questions, Assistance, and Repairs

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the product has been started, you must contact Horizon Hobby, Inc. directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance.

Questions or Assistance

For questions or assistance, please direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a service technician.

Inspection or Repairs

If your product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). Pack the product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon Hobby, Inc. is not responsible for merchandise until it arrives and is accepted at our facility. Include your complete name, address, phone number where you can be reached during business days, RMA number, and a brief summary of the problem. Be sure your name, address, and RMA number are clearly written on the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Providing warranty conditions have been met, your product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs

Should your repair not be covered by warranty and the expense exceeds 50% of the retail purchase cost, you will be provided with an estimate advising you of your options. You will be billed for any return freight for non-warranty repairs. Please advise us of your preferred method of payment. Horizon Hobby accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly.

Electronics and engines requiring inspection or repair should be shipped to the following address (freight prepaid):

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

All other products requiring inspection or repair should be shipped to the following address (freight prepaid):

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822

4105 Fieldstone Road
Champaign, IL 61822
(877) 504.0233
www.horizonhobby.com

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