

JR PROPO® RADIO SYSTEM

T14x4

2.4GHz 14 CHANNEL TRANSMITTER

Operation Manual

Prior to use, please read this manual thoroughly.
Keep this manual in a convenient place for quick
and easy reference.

Greetings

Thank you for choosing to purchase this product.

This is a highly developed product with outstanding functionality and ergonomics that concentrates the essence of the technology built up by this company through many decades of experience. In order to make full use of the features of this radio and to safely enjoy your RC activities, please carefully read this operation manual.

Our whole company hopes that you will enjoy using this product for many years.

Features

This is a multi-function 14-channel transmitter that is capable of supporting many aircraft. It has functionality normally only seen in more expensive transmitters.

- JR's newly developed DMSS system maintains high-speed servo response while allowing simultaneous use of telemetry functions.
- The high-speed telemetry function allows information from the aircraft (that was previously unknown to the user) to be monitored on the transmitter. In addition, alarms with unique sounds alert the user to the situation on the aircraft without even looking at the screen.
- The telemetry sensor connection employs a bus system that does not require a relay box, allowing sensor extensions and additions to be easily carried out. It is acceptable to merely connect the necessary sensors in parallel.
- A new-generation long-life Li-Fe battery is used which contributes to a large reduction in transmitter weight. The charging control circuit is built into the transmitter.
- Using an automatic safety system, the receiver will not operate if the correct model has not been selected in the transmitter before flight.
- The transmitter has an easy to read backlit LCD display and input keys that are intuitive and easy to use.
- An E-ring function is incorporated allowing easy limitation of the operation range of the CCPM swash plate servos.
- A Trim Input function can allocate trim levers to change numerical values of various functions (such as program mix values) during flight.
- A new function synchronizes the operation of servos on multiple flight control surfaces in real time. This completely eliminates the time lag where fast control inputs are required.
- A SD card slot is provided which enables saving of aircraft model data and updating of transmitter software to be easily carried out, without connecting the transmitter to a PC.
- An auto-display function allows digital trim operation to be preferentially displayed on the screen.
- When inputting numerical values, simultaneously pressing the function key allows the value to be changed at a ten-times faster speed.
- A servo speed function is incorporated for all channels, and it allows adjustment to be carried out in each operation direction.
- The 30-aircraft model memory can be utilized for storing helicopter, airplane, and glider models.
- A Trainer function is incorporated, which also allows training to be carried out individually for each stick channel.
- The throttle curve, pitch curve, and curve mixing use a multiple point adjusting method, and you can activate an optional exponential curve function that further smoothes the curves.
- Six systems of multi-function program mixing are available.
- A Touch Select function is incorporated, which enables automatic switch selection for programmed functions. This selection is easily carried out.
- A 'My List' screen is provided that enables display and simple calling up of only functions that the user has selected.
- Switch arrangement stickers are included for each transmitter model type so users can change the switch arrangement stickers as they please for airplanes and helicopters.
- The stick units have been mounted at a slight angle so that they can be easily operated in all operating range extremes.

Specifications of the Transmitter

ITEMS	SPEC.
Part Number:	JR/DFA T14 x4
Type of control:	14 channel computer mixing
RF:	2.4GHz
Modulation:	DMSS(Dual Modulation Spectrum System),
Power source:	6.4V Lithium Ferrite battery 2F1400(1400mA)
Neutral position:	1.5ms

Specifications of the AC adapter

ITEMS	SPEC.
Part number:	NET-A912* Note: The letter suffix this part number indicates the type of power plug. A: For European plugs B: For UK, Hong Kong plugs C: For Canada, USA & Japan plugs D: For Australia & New Zealand plugs
Input voltage:	AC100V-240V 50/60Hz
Output voltage:	DC9V 1.3A MAX 12W

General Safety Precautions

About the Proportional System

This company cannot be responsible for any accident or failure that may occur from any modification of this product, use of non-genuine parts, natural disaster, or nonobservance of the precautions described in this manual.

Further, for damages caused by an accident or failure, please understand that items (excepting this product and this Company's genuine parts) such as airplanes, competitor's products, etc will not be covered under the warranty.

The use of radio waves required by this product is defined in the Radio Law of Japan.

- When this product is used overseas, authorization by the law of the country will be required.
- When this product is used overseas for a purpose other than as radio control system for a model, it may be subject to the restrictions in accordance with the Export Trade Control Order. In such a case, an export permit under the Order is required.

Basic Precautions for Safe Use of the 2.4GHz System

The 2.4GHz band is not exclusively for use with RC airplanes. This frequency band is in common use with the ISM (industry, science, and medical care) band which is widely used for short-distance transmission such as microwave ovens, wireless LAN, digital cordless phones, audio games, cellphone Bluetooth, and VICS. Therefore, the steering response of the 2.4GHz system may be degraded in an urban area. Further, as it is also used for ham and local area radio communications for mobile identification, please pay attention to possible influences from these. In the event of any adverse radio wave interference on an existing wireless station, immediately stop emitting radio waves and take interference avoidance measures.

- At a race track/airfield, minimize use of devices that can affect the transmitter/receiver and be sure to confirm safety beforehand. Also, always follow instructions given by the facility staff.
- If an aircraft is allowed to fly behind a building, a pylon, trees, etc. so that the radio-wave range is blocked, the steering response may drop, even resulting in an "out-of-control" situation. Always let the aircraft fly within a range that can be visually observed.

* It is very important to ensure that you observe the following precautions.

Indications and Symbols Related to Safety

The following symbols used in this manual indicate the precautions regarding possible danger which may occur following improper handling. Be sure to strictly observe them, as they contain important safety instructions.



DANGER

If incorrect operation methods are used, there will be a danger of death or serious injury.



WARNING

If incorrect operation methods are used, there will be a possibility of death or serious injury.



CAUTION

If incorrect operation methods are used, it can be expected that there will be a possibility of problems occurring.

How to Handle

Before starting use, make sure that all the parts are provided. Then, connect the switch harness and servo to the receiver, and insert batteries into the transmitter/receivers. Turn on the transmitter/receiver and confirm that they operate correctly. If they do not operate, check the batteries. If a rechargeable battery is used for the first time after purchase or is used after being left unused for a long period, be sure to charge it with the battery charger before use, and confirm the transmitter and receiver are correctly bound.

Refer to the Page 12 "Binding Procedure (pairing the transmitter and receiver)" Method"

In the event of any missing parts, malfunction, etc., please contact your JR agent or distributor in your country.



DANGER



This indicates actions that are forbidden.



This indicates actions that must be implemented.

- ⊘ **Out-of-control and dangerous situations can be caused.**

DO NOT use the product on rainy days since it may cause malfunction if water gets inside the transmitter/receiver. If use is a necessity, be sure to take waterproof measures.

- ⊘ **Injury due to heat generation, fire, or electric shock can occur.**

Never disassemble or modify this product.

- ⚠ **The engine and the motor (in the case of an electrically-driven model) can start rotating at high speed, causing danger.**

When turning on the power switch, set the transmitter throttle stick to the lowest speed position (where the engine/motor rotation does not become high) and turn on the transmitter power switch and the receiver power switch in this order.

For turning off power, turn off the receiver and then transmitter in this order.

- ⚠ **Injury can be caused.**

When adjusting the engine (motor), pay attention to dangers presented.

- ⊘ **DO NOT start the engine with the transmitter throttle in a high speed position. This is very dangerous.**

! WARNING

- ⊘ **Failure can be caused.**
DO NOT use this module set in combination with a competitor's product (servo, gyroscope, etc.).

- ⊘ **Malfunction can be caused.**
As the electronic parts mounted on the transmitter/receiver are susceptible to impact, DO NOT apply strong impact or drop them.

- ! **Out-of-control and dangerous situations can be caused.**

When degraded servo movement is detected, immediately stop operating and check the battery power remaining, servos, etc.

- ⊘ **DO NOT use the product in the following places, as there is a risk of an out-of-control state or an accident occurring:**

- ⊕ Transceiver interference exists.
- ⊕ Passing near to traffic consisting of cars and motorbikes.
- ⊕ Near a high-tension electric line, building, bank, or in a mountainous area etc.
- ⊕ Near an FM/TV station, or a radio transmitting station for ship radios.
- ⊕ Near residences and buildings, and near people.

- ⊘ **A sudden malfunction may occur and will be dangerous.**

Even if the receiver, servo etc. go under water and operate normally after it is fully dried, the servo may malfunction. In such case, DO NOT continue to use the product, and contact this company for inspection regardless of normal operation.

! CAUTION

- ! **Prior to flying, check the following items for safety:**

- ⊕ Is there enough battery remaining in the transmitter/receiver? (Is the rechargeable battery fully charged?)
- ⊕ Is there any fuel spillage on the receiver, servo, etc. which was caused by leakage from the fuel tank? Is there enough fuel?
Check that no linkage is in contact with the airplane body. Also, conduct a vibration test by setting the engine (motor) to high while holding the body and confirm that each control surface moves correctly.

- ! **In the case of the initial flight, avoid flying at great distances, choose a safe place, and perform flying practice in the vicinity for several minutes.**

■ Rechargeable Battery and Battery Charger

- ! Abide by the following to prevent potential leakage, explosion, heat generation, and fire.

! DANGER

- ! **The AC/DC Adapter is multi-voltage (100V-240V). Be sure to use appropriate outlet plugs.**

- ⊘ **DO NOT use/Adapter with (+) or (-) set in the opposite direction.**

- ⊘ **DO NOT place near fire or heat.**

- ⊘ **DO NOT connect (+) or (-) to any material that may conduct electricity including metals (wire, etc.), carbon materials, etc.**

- ⊘ **DO NOT disassemble, remodel, or solder.**

- ! **It may cause a loss of vision if the liquid inside the battery gets into your eyes. Consult a doctor immediately after washing eyes with clean water, and DO NOT rub eye areas.**

! WARNING

- ! **Failure can be caused.**

Use a genuine JR battery. Always. Stop charging when the specified charging time is exceeded.

- ⊘ **DO NOT wet the battery with water or sea water.**

- ⊘ **DO NOT scratch or tear off the insulating tube, the lead wire, or the connector.**

- ⊘ **DO NOT use the battery if a scratch is left on the insulating tube, lead wire, and connector, or if the insulation is damaged.**

- ! **It may damage skin if leaked battery liquid stays on your skin or clothes. Wash away immediately with clean water.**

- ! **Out-of-control and dangerous situations can be caused.**

The rechargeable battery is composed of a combination of several numbers of batteries. Thus, confirm that all rechargeable batteries inside the pack are in normal state by using a battery checker, etc. Note that the actual battery level of the rechargeable batteries can not be precisely confirmed by testers such as a battery checker. Make sure to judge the state in a comprehensive way by using a battery checker, checking the recharging time, and operating time.

! CAUTION

- ⊘ **DO NOT store the battery in a place with high temperature/humidity or dust.**

- ! **Store the battery out of reach of children.**

- ⊘ **DO NOT charge the battery in a place with low temperature (below zero degrees Celsius).**

- ! **Dispose of old batteries according to the local disposal regulations, and do not throw them away in garbage cans, etc.**

■ Recycling the Rechargeable Battery

Used Li-Fe batteries and nickel metal-hydrate batteries are important resources. Place a piece of tape or similar over the terminal areas, and bring them to cooperative stores that collect small rechargeable batteries.

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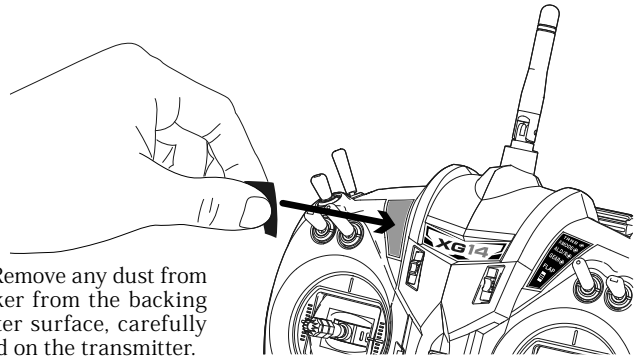
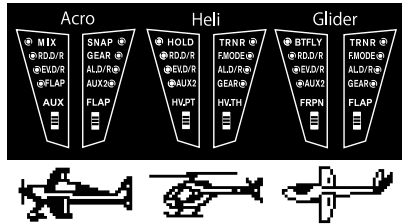
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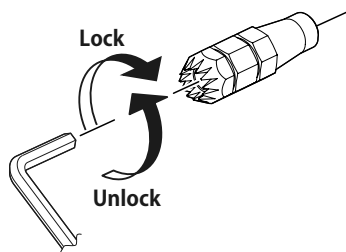
Switch Identification Stickers



Affix the sticker for your preferred model type. Remove any dust from the affixing surface, and then detach the sticker from the backing paper. Next, apply the sticker to the transmitter surface, carefully matching the edges with the sticker area marked on the transmitter.

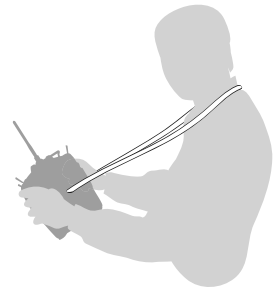
Stick Length Adjustment

Undo the recessed set screw located at the tip of the control stick. Now rotate the entire stick to adjust its length. When finished, lock the recessed set screw.



Neck Strap Attachment

For long flights you may choose to use a neck strap.

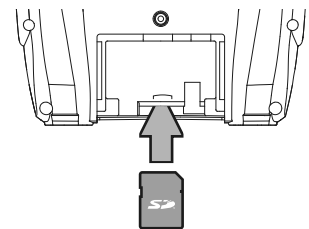


Inserting and Removing the SD Card

Compatible SD Cards are 16GB or less in size and be formatted in FAT format. Inserting and removing SD cards should be carried out after opening the battery cover, with the transmitter switched off. The SD card slot is located below the battery. Further, among the SD cards that are available, some types cannot be used. To ensure compatibility, please use the JR-SDM2G SD card (sold separately).

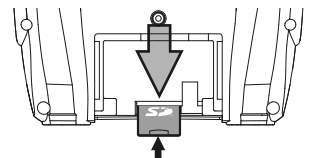
Inserting method

Switch off the transmitter, and then slowly insert the SD card into the slot until you feel a "click". Note correct orientation of the card.



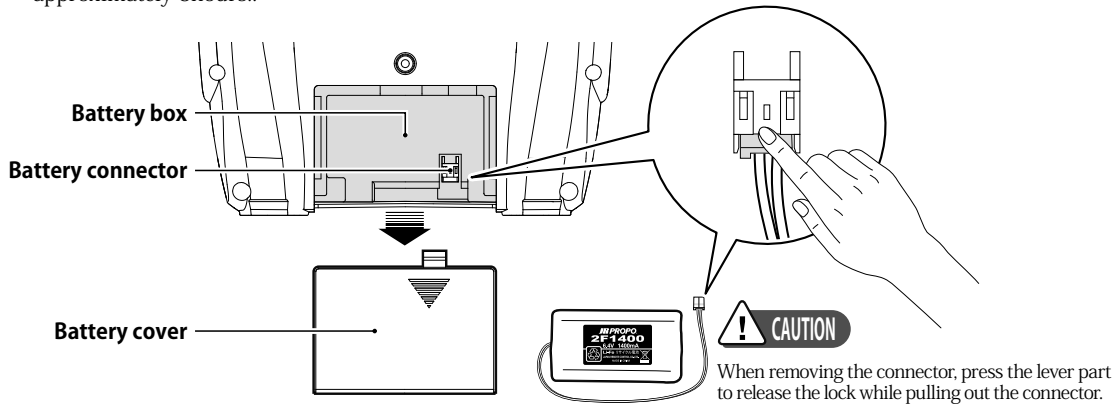
Removing The Card

Lightly press in the middle of the SD card until it clicks - the card will pop out slightly when you remove your finger - now carefully pull the card out the rest of the way.



Inserting and Removing the transmitter battery

- 1) While pressing the embossed mark on the rear surface of the battery lid, Slide the lid in arrowed direction of the arrow. And remove.
- 2) Carefully insert the rechargeable battery connector into the transmitter battery connector.
- 3) Fit the rechargeable battery into the battery box together with filling sponge, and mount the battery cover, taking care not to pinch the lead wires. During the charging, the transmitter LED will light in a reddish purple color. When charging has been completed, the LED will switch off. The standard charging time is approximately 3hours..



Charging the Transmitter Battery

Before charging the battery, be certain to read the precautions written on the battery label.

The transmitter operates exclusively with genuine JR Li-Fe batteries. Do not use the transmitter with other rechargeable batteries or with dry cell batteries.

During charging, the transmitter should be switched off. When the transmitter ON, charging will not take place. Note that if using a flight simulator with the control cable plugged into the trainer jack (and the power switch OFF on the transmitter), it is possible to plug the charge cable into the transmitter and use the AC adaptor to supply power. Since the built-in battery will not be used, this will allow enjoyment while conserving energy.

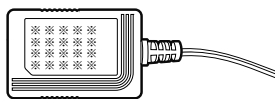
- 1) Insert the AC adaptor into the AC electric power socket.
 - 2) Insert the plug of the AC adapter as far as it will go into the DC power jack of the transmitter. If the LED of the transmitter does not illuminate, an error may have occurred. In this situation, detach the AC adapter plug. And re-insert it. If the LED does not light even after the cable has been removed and inserted several times, Please contact your JR agent or Distributor in your country.
 - 3) During the charging, the LED of the transmitter will light reddish Purple. When charging is complete, the LED will switch off. The standard charging time is approximately 3hours.
 - 4) After charging has been completed, promptly detach all the connections. Absolutely do not leave the charger connected to the transmitter.
- ※ Be certain to only use the genuine JR XG14 dedicated AC adaptor (NEC-A912C). Charging cannot be carried out using other AC adapters. Further, do not use this AC adapter for charging products other than the XG14.



Warning ! Abnormal heat generation may cause explosion of the battery!

After charging is complete, quickly detach all of the connections including the AC adaptor from outlet. Never leave the AC adaptor connected to the transmitter or plugged into the AC outlet. This is to avoid possible fire risk after charging the battery. Do not use the AC adapter while the cord is still bundled together, since there will be a risk of heat generation.

To the AC Electric Power Outlet



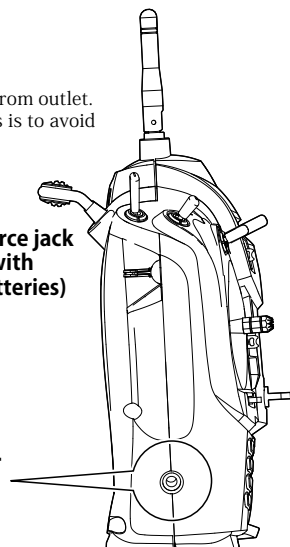
9V 12W AC Adaptor for Recharging(NEC-A912C)

※Note: This adaptor can only be used when plugged into the XG14 - it is not a stand alone charger.

To the Recharging Power Source jack
(Exclusively for transmitters with
built-in Li-fe rechargeable batteries)



Power source jack for
recharging (DC9V)



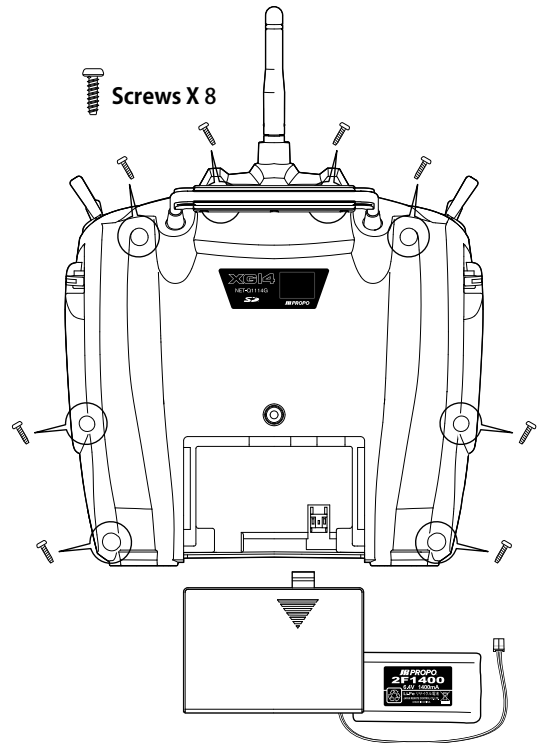
Do not use the AC adapter while the cord is still bundled together, since there will be a risk of heat generation.

Notes on stick tension spring adjustment and the throttle stroke travel adjustment plate

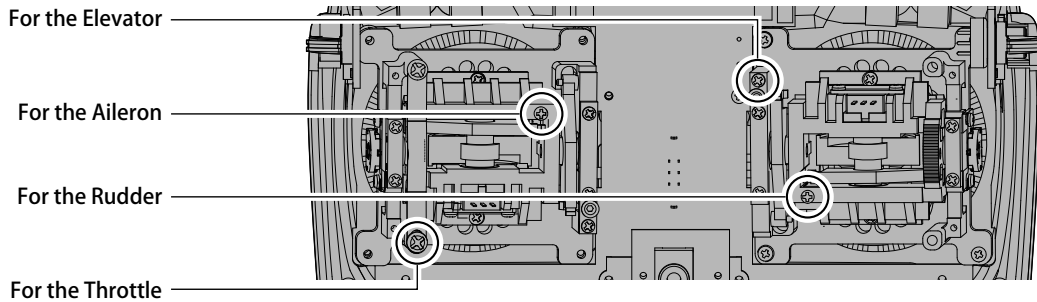
This allows adjustment of the stick spring strength.

- ① Be certain to remove the battery before carrying out any adjustments.
- ② Remove the screws in the eight(8)locations on the rear case.
- ③ Adjust the springs to the desired spring tension. By carefully adjusting each of the screws, you can achieve a range of spring tensions.
- ④ Close the rear cover, and tighten the screws. Take care of the interlocking of levers, etc. If you prefer a ratchet on the throttle, replace the spring plate as shown in the drawing on the left at the bottom of this page. The drawing on the right shows the default setting, giving a smooth throttle transition.

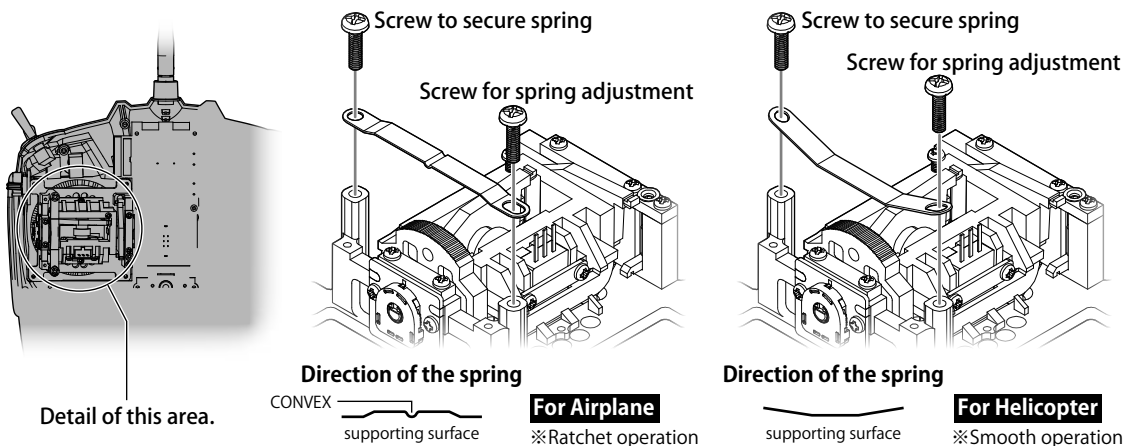
! Never Touch the Printed Circuit Board or any related parts inside the transmitter.



Mode 1 Example



※ Touching the board may result in electric shock, uncontrolled microcomputer operation, or damage to model data, and normal operation may become impossible.

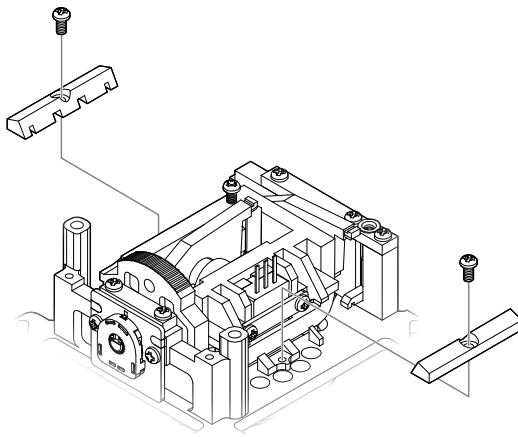


■ Throttle stroke travel adjustment

- By adding the Throttle stroke adjustment plate to the gimbal, the throttle stroke is limited by approximately 5 degrees.
- Be sure to install or remove the plate with reference to the drawing. When adding this "limiter plate" it is essential to recalibrate the throttle stick range. Be sure to follow this procedure.

Note:

Refer to the Page 76 "Transmitter Setting [TX SETTING]" in the system list for further details of calibration.



■ Handling of the Rechargeable Ni-MH batteries used for the Receiver

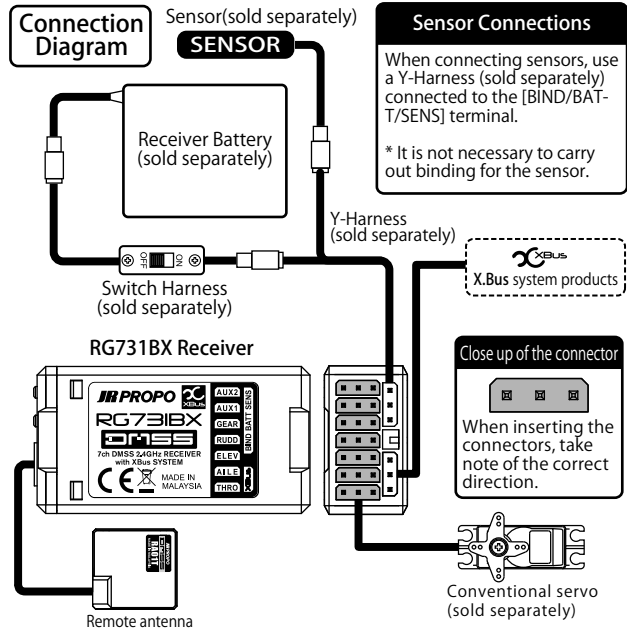
- Because nickel metal hydride batteries have a high self-discharge rate, battery discharge will gradually take place even when the battery is not being used.
- For new batteries and batteries that have not been used for a long time, be certain to fully charge before use. In addition, if the battery is repeatedly charged having not been fully discharged, the battery chemistry characteristics may mean that the discharge capacity becomes temporarily reduced, because of a 'memory effect'. It is therefore recommended you occasionally fully discharge the battery and then recharge it before use.
- Charging at very high and low temperatures is dangerous.
- Charging nickel metal hydride batteries at high temperatures will cause a noticeable drop in charge capacity. Therefore, do not charge in a hot environment, for example inside a car. Hydrogen gas may be generated during charge and discharge - avoid charging close to any open flame.

Receiver Connections

Receiver Connections to the servos and the power supply

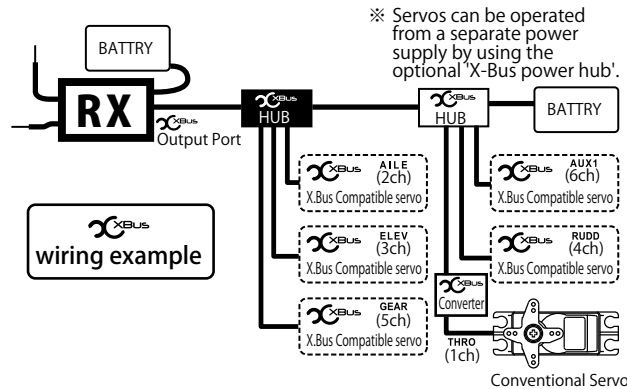
JR labels the channels on the receiver with names rather than numbers. From this point onward in the manual, the receiver channels will be described using their names.

- Since the receiver is susceptible to vibration, shock, and water, anti-vibration and waterproofing measures should be implemented.
- If the connectors become detached while flying, there will be a risk of uncontrolled operation. Please securely insert all of the connectors as far as they will go.
- In the situation where relay connectors (extension leads) are used during installation rubber sponge should be wrapped round the connectors to fix them. Be absolutely sure not to leave the connectors hanging unsupported.



XBus

- The all new XBus system uses JR's own serial bus data instead of PWM (Pulse Wide Modulation) to communicate with XBus products such as servos.
- Control signals are sent in a serial manner to all channels, with individual servos recognizing their own data from receiver.
- Non XBus servos can still be used in conjunction with a channel decoder (e.g. XB1-CPR), or plugged directly into the receiver (avoiding the XBus port).
- Never plug any non XBus device into the XBus system as a failure is sure to occur.
- On large models, our optional XBus power hub allows servos to receive a separate power supply.
- Our new XBus receiver is also able to be plugged directly into compatible helicopter FBL units, allowing a single connection between the receiver and FBL unit.



Connection list to Receiver

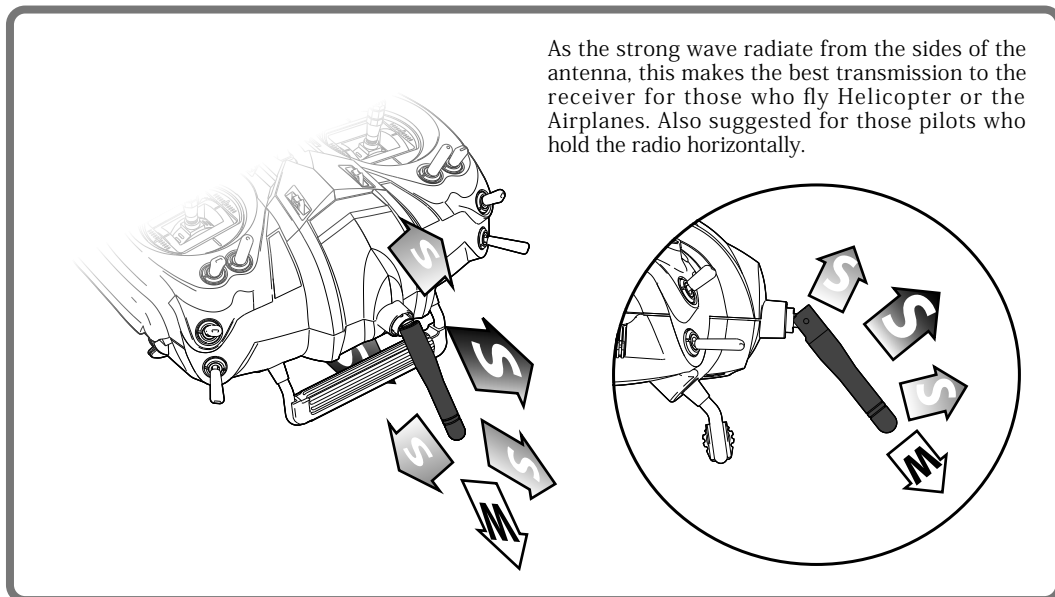
Receiver	Helicopter	Airplane	Glider
1) THRO	THRO	THRO	LAILE
2) AILE	AILE	AILE	RAILE
3) ELEV	ELEV	ELEV	ELEV
4) RUDD	RUDD	RUDD	RUDD
5) GEAR	GYRO	GEAR	GEAR
6) AUX1	PIT.	FLAP	FLAP
7) AUX2	GOV	AUX2	AUX2

■ Using the transmitter and receiver.

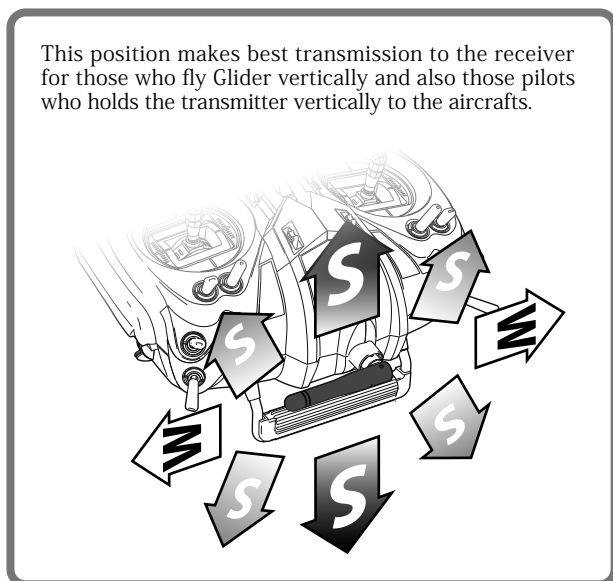
Receiver mounting location.

■ Please set up the antenna direction as per the following drawing.

The 2.4GHz band radio waves are very directional. The receiver signal is very dependant on the direction of the antenna. Since the antenna receives radio waves from the sides rather than from the tip, please appropriately position the receiver antenna when installing the receiver in the model.



This position makes best transmission to the receiver for those who fly Glider vertically and also those pilots who holds the transmitter vertically to the aircrafts.



記号の意味



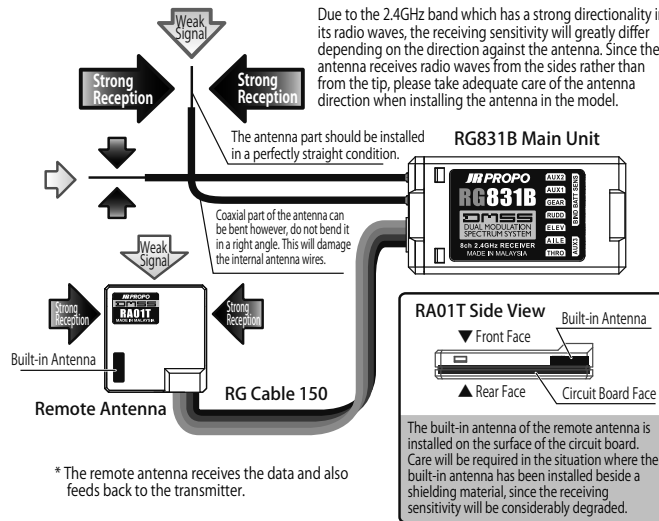
Strong radio wave
Strong radio wave transmitted to the aircraft, helicopter, etc.



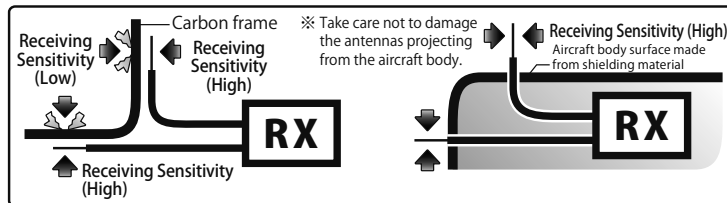
Weak radio wave
Radio wave is weak.

2.4GHz Antenna Considerations

2.4GHz band radio waves have strong directionality so receiving sensitivity differs greatly depending on the direction of antenna orientation.



If the antenna is attached directly to a shielding material such as carbon or metal, the receiving sensitivity of the antenna is considerably reduced.



- Multi Coaxial Antenna type receiver (more than one coaxial antenna extending from the receiver)
Be sure to install the antenna's at right angles to each other, rather than parallel.
- Single Coaxial Antenna type receiver
Avoid placing the antenna along a carbon fuselage, or surrounded by metal materials.

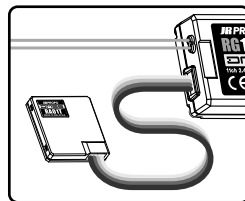
Remote Antenna installation

The remote Antenna RA01T receives data from the transmitter, and also feeds telemetry data back to the Transmitter so it is highly recommended to locate the Remote Antenna away from the main Receiver unit, ESC, Regulator, Servos, Gyro Sensors, harness or Power cables, etc to avoid interference.

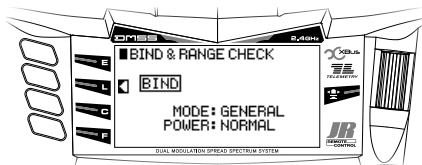
■ Binding Procedure (pairing the transmitter and receiver)

In order for the transmitter and receiver to communicate, it is essential to pair or bind them together. Please follow this procedure:

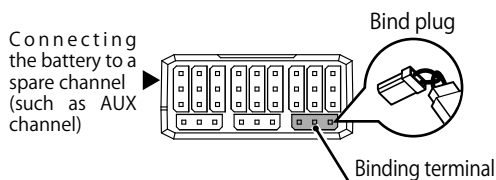
- 1) Be sure that remote antenna unit is properly connected to the receiver. Locate the included bind plug, and ensure the transmitter and receiver batteries are fully charged.
- ※ Note that the Remote Antenna acts as both a receiver and also transmits data back to the transmitter. Carefully note the orientation of the antenna within the remote unit. This orientation is extremely important.
- 2) On the transmitter access the "BIND & RANGE" menu under the System List.
Refer to the Page 78 "Bind and Range Check [BIND&RANGE] "



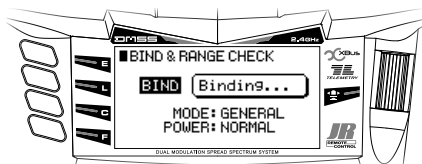
- 3) Inserting the bind plug into the bind terminal of the receiver and connect the battery to a spare channel (such as the AUX channel) - the LED's on the receiver and the remote antenna will begin to blink (Ready to Bind).
Note:
Be sure to insert the bind plug before connecting the battery.



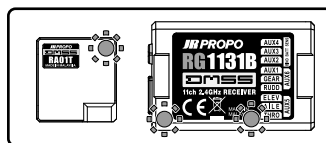
- 4) Refer to the "BIND & RANGE CHECK" Screen in the transmitter System Setting mode. Press the dial to start the binding process.



- 5) 'Binding' will flash on the transmitter display, and upon completion of the binding process, it will display "SUCCESS ! PLEASE CHECK FAIL SAFE". Concurrently, both receiver's LED's will stop flashing and be solid - signifying completion of the bind process. Disconnect the bind plug from receiver, disconnect the receiver battery and switch off transmitter. If the LED's continue to blink, repeat the procedure from the beginning.

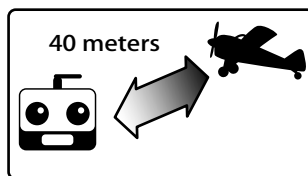
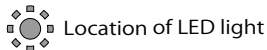


- 6) Lastly, connect a servo, turn on the transmitter then receiver, and confirm that communications have been established.



Range Check

This checks the performance of the transmitter by lowering the power output to simulate a long distance range test. Under the " Bind & Range Check" setting screen, move the cursor to the POWER: NORMAL column and change it to LOW. The transmitter LED shall flash Blue to indicate it is set to low power mode. When in this mode, walk a distance of approximately 40m from the aircraft and confirm that the transmitter operates the aircraft normally. Continue testing as you walk around the aircraft. Refer to the Page 78 "Bind and Range Check [BIND&RANGE] "



If the bind process or range check is not successful, check the following items:

1. Are the transmitter and receiver batteries fully charged?
2. Is the remote antenna securely connected?
3. Is the distance between the transmitter and receiver too close?
4. When the procedure is carried out on the top of a desk or bench top that is made from metal, the binding procedure may not be successful.

! Be sure that the failsafe settings are set in the transmitter.

Please note that when the model or model type is changed in the transmitter, re-binding will be required. Never fly the aircraft in Range Check mode.

Refer to the Page 89 "Fail safe [FAIL SAFE] "

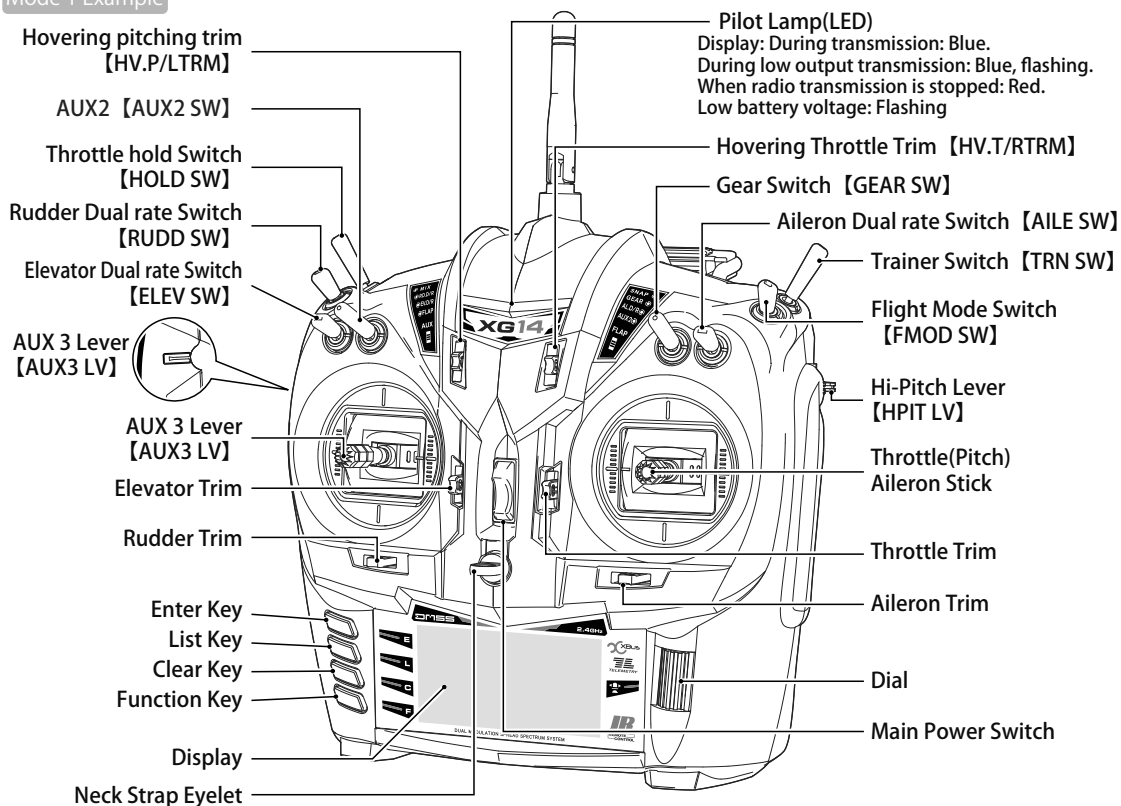
Names of Each Transmitter Control



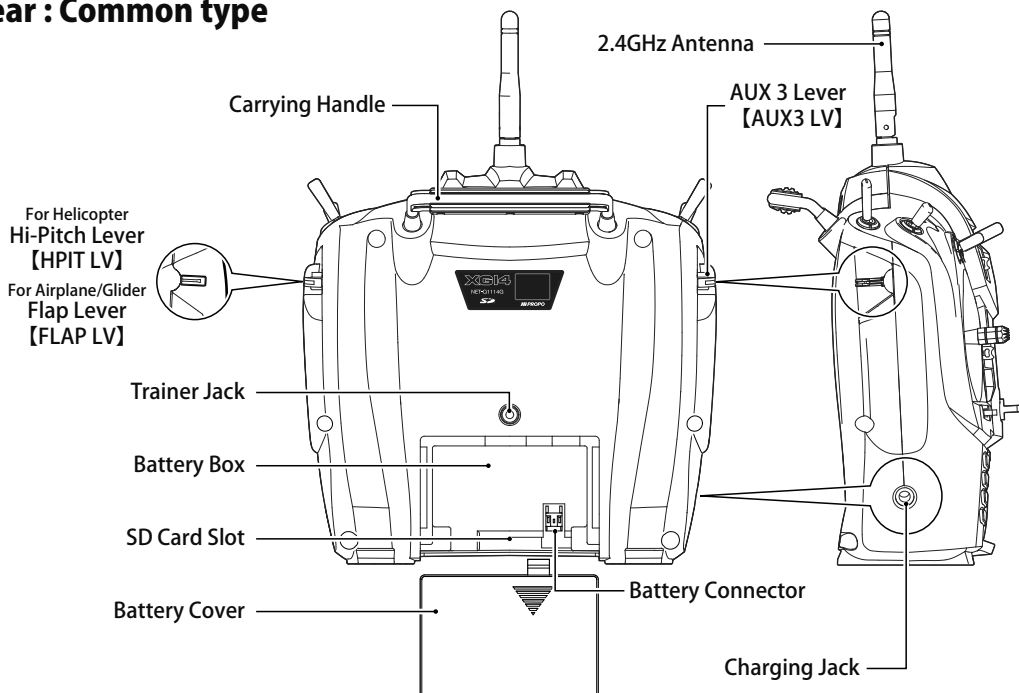
Helicopter Type The names in square brackets [] are the abbreviated characters displayed on each setting screen.

! JR gives each switch or lever a name rather than a number on the transmitter. The names and positions are different depending on the model type. Please note this when reading the manual.

Mode 1 Example



Rear : Common type



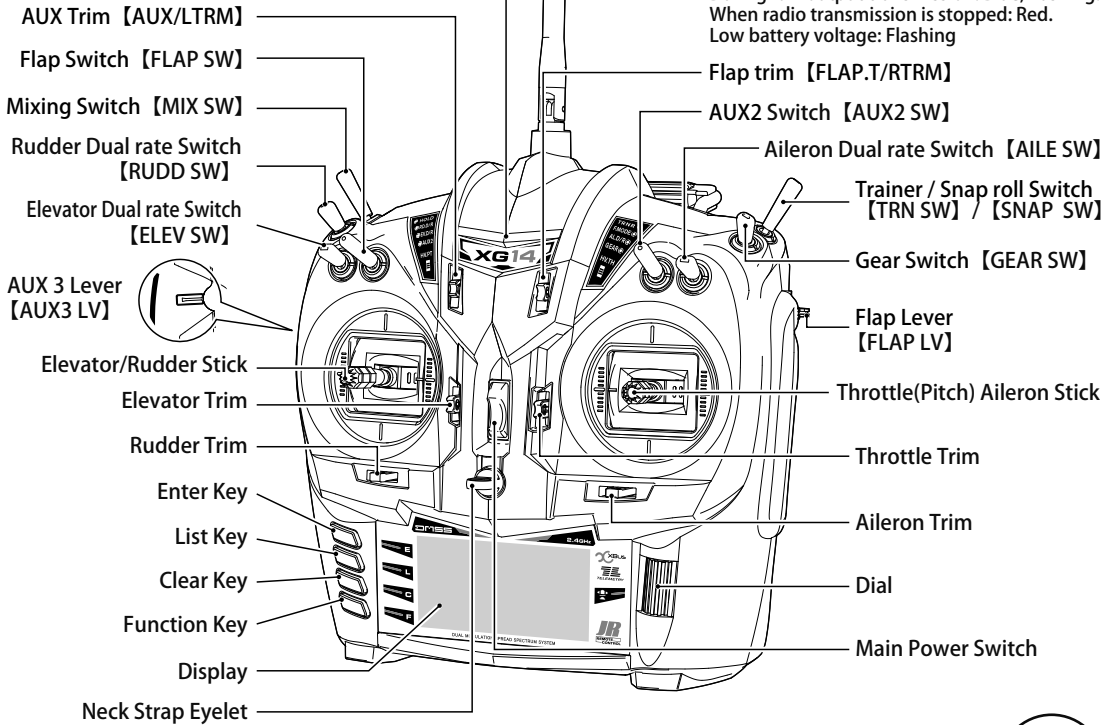
Names of Each Transmitter Control



Airplane Type

The names in square brackets [] are the abbreviated characters displayed on each setting screen.

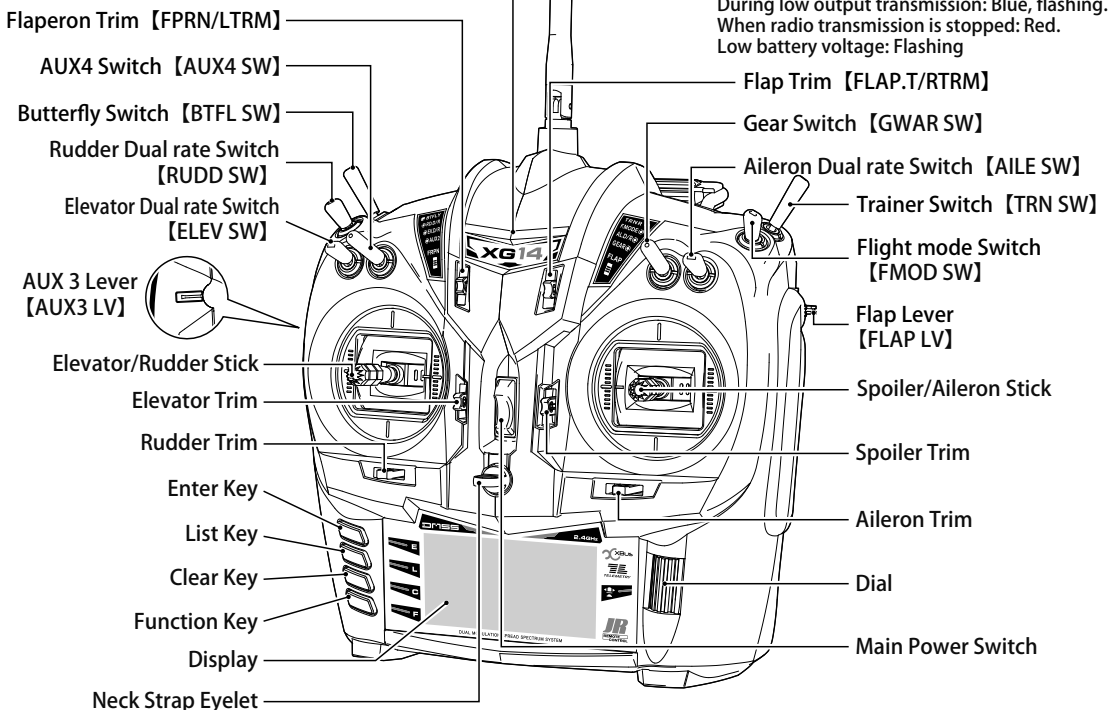
Mode 1 Example



Glider Type

The names in square brackets [] are the abbreviated characters displayed on each setting screen.

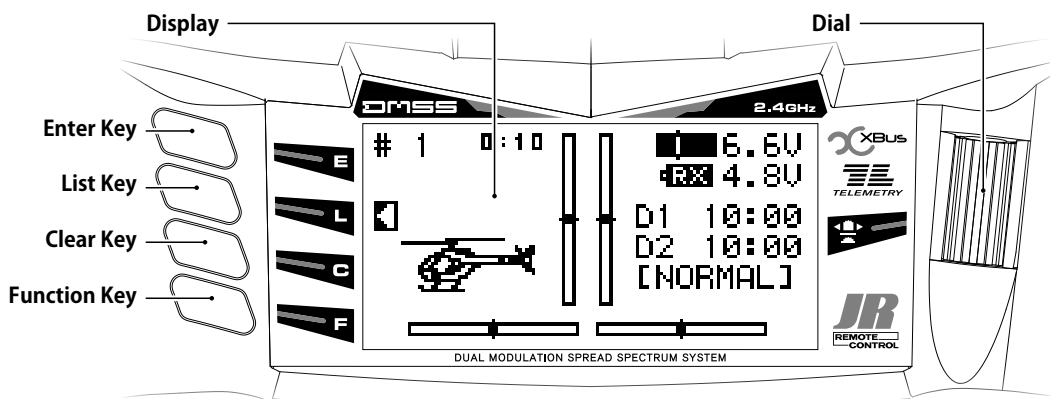
Mode 1 Example



Names and Functions of the Input Keys

In addition to the standard button keys for input, this transmitter employs a jog-dial. When programming the transmitter, almost all operations can be performed very intuitively using this dial. The dial is used by rotating it left or right, and pressing it.

- A “click” sound is heard confirming a valid input.
- A “click” sound may also be heard without any change to the numerical numbers on the display. This is because numerical numbers below the decimal point are not displayed, even though the set value is changed internally.
- The button keys on the left side of the transmitter operate when a triangular arrow is displayed on the LCD. When the name of the key (abbreviated) is displayed on the LCD, the key will function as displayed. The key display is as shown in the figure below.



Dial

Turn the dial right or left to select an item and to increase or decrease a preset value. Further, press (click) the dial to select an item or to exit the current item being set.

ENTER Key

If this key is pressed when the INFO screen is being displayed, the screen will change to the My List screen. This can be used for moving to each of the other functions.

LIST Key

In function fixing, when this key is pressed the screen changes to the Function Listing screen.

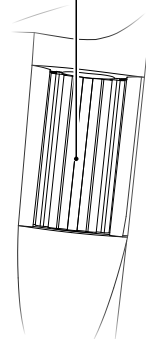
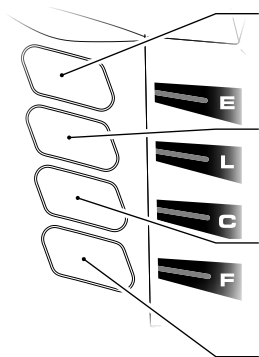
CLEAR Key

This key has a primary function of resetting a value back to default. It also operates as displayed when an item other than an arrow is displayed on the screen.

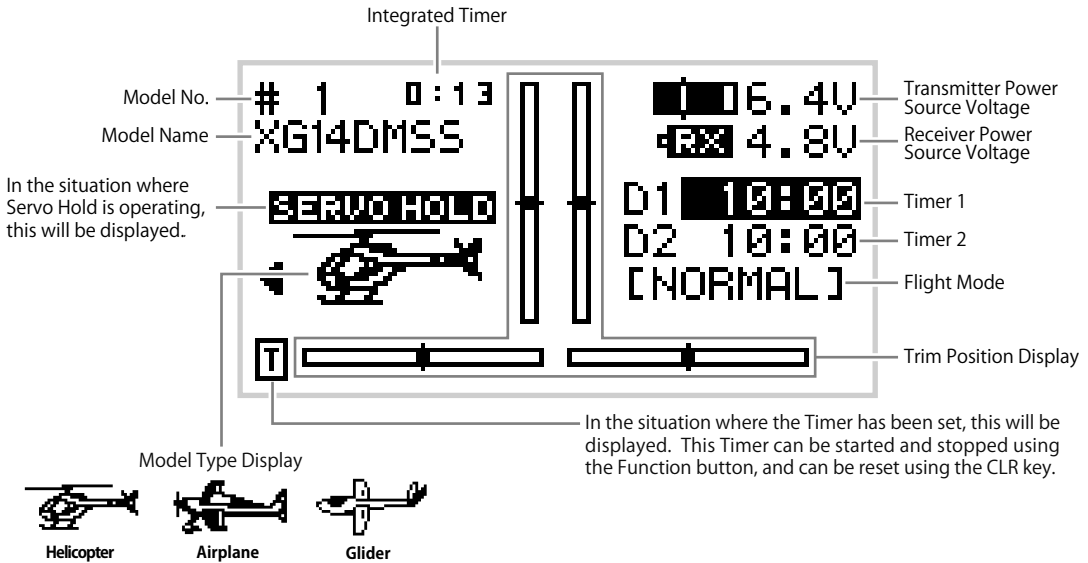
FUNCTION Key

Though this key has no allocated function, it operates as displayed when an item is displayed on the screen.

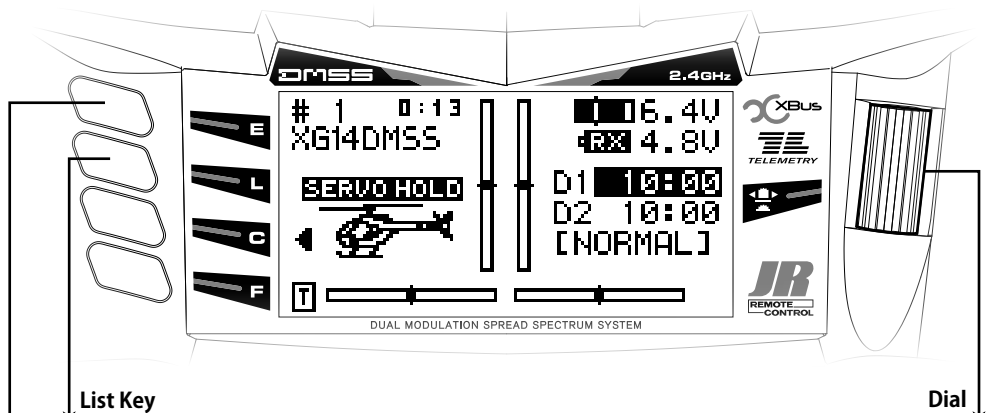
For example, as a Timer start/stop key etc. Also, when this key is pressed at the time of entering numbers with a dial, the number changes at ten times the normal speed.



Initial INFO Screen



Initial INFO Screen



FUNCTION LIST 1/2	
D/R & EXP	PIT. CURVE
TRAV. ADJ.	TAIL CURVE
SUB TRIM	THRO HOLD
REVERSE SW	GYRO SENS
THRO CURVE	SWASH MIX

• Refer to the Page 21 "Function List" Section

# 1	0:00	4.7V
RX-BATT	4.9V	ALTITUDE
		+36.9m
RPM	3208rpm	TIMER1
		D1 10:00
TEMP.	+26°C	FMOD
		NORMAL

• Refer to the Page 79 "Telemetry System [TELEMETRY]"

Enter Key

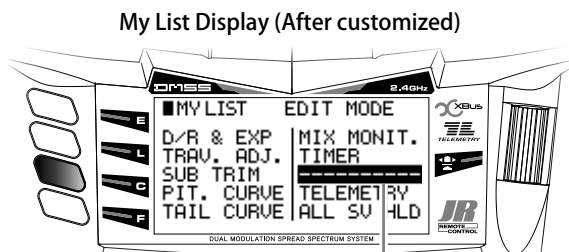
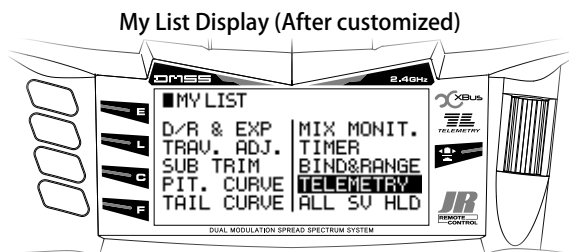
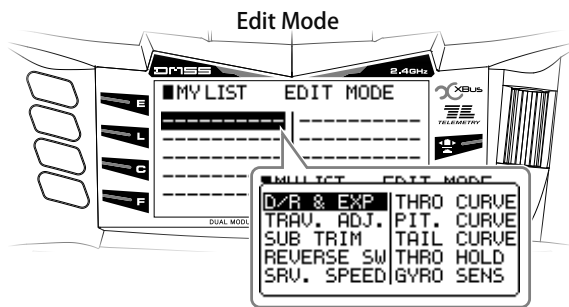
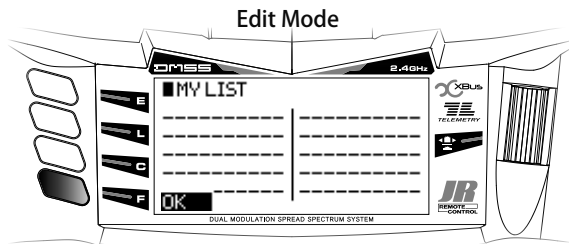
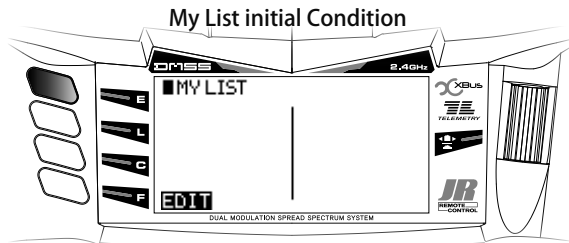
MY LIST
EDIT

• Refer to the Page 17 "My List Screen"

My List Screen

My List Function

- Frequently used functions can be selected and displayed on the customizable 'My List' for quick access.
Pressing the ENTER key while on the normal screen will select the My List display.
Nothing will be displayed on the My List screen until it has been customized.
- To add functions to this list, press the lowermost Function key. The display will be shown and "EDIT MODE" will flash.
- Rotate the dial to move the cursor to the desired position and press the dial to display the items that can be added to the list. Rotate the dial to move the cursor to the item that you wish to add and press the dial.
- By returning to the Edit Mode and pressing the Function key, the input will be completed. If you wish to delete a function from the 'My List' screen, move the cursor to the item and press the 'Clear' key.

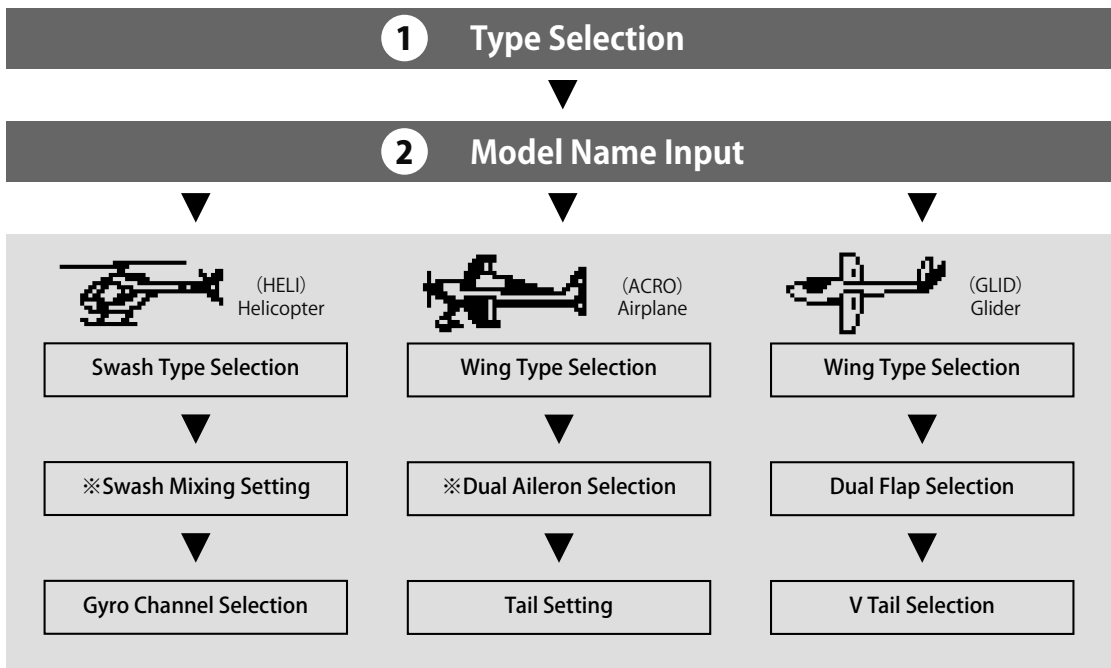


Delete item on My List

Navigation during Model Setting

When a new model has been created, or when the model type has been changed, it is necessary to enter basic initial information.

- 1) Type selection
- 2) Model Name
- 3) Complete some basic setup information depending on the model type selected, as shown below.
 - ◉ HELI: Swash Type Selection -> Swash Mixing Setting * When CCPM is selected -> Gyro Channel Selection
 - ◉ ACRO: Wing Type Selection -> Dual Aileron Selection * When "NORMAL" wing type is selected -> V Tail Selection
 - ◉ GLID: Dual Flap Selection -> V Tail Selection



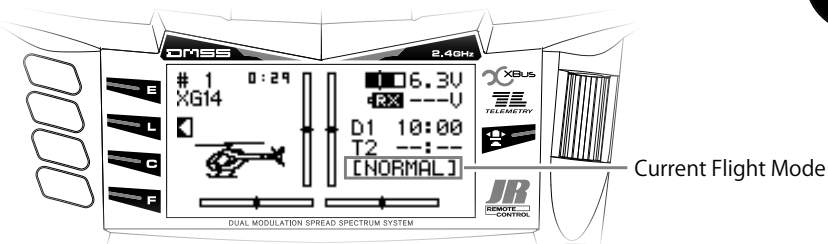
※When CCPM is selected.

※When "NORMAL" wing type is selected.

FLIGHT MODE

Function Explanation

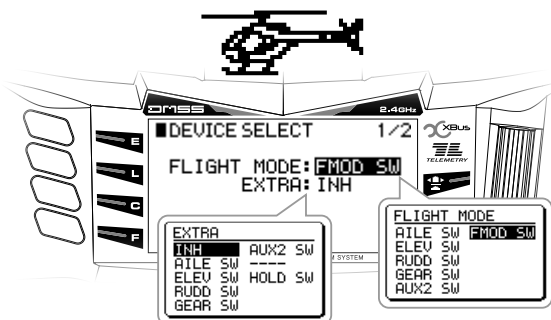
- The Flight Mode function allows switching between various aircraft settings using a switch. This means it is possible to select aircraft flight characteristics using a 'one-touch' operation.
- The maximum number of flight modes which can be selected varies with model type. It is possible to select up to six flight modes for helicopters, up to five flight modes for airplanes, and a maximum of eight flight modes for gliders.
- The current Flight Mode is displayed on the Initial INFO screen, where it can be confirmed. In addition, it is possible to change the displayed flight mode name using the Flight Mode Name screen in the System List.



※ Important note: By default, the Flight Mode switches in airplane and glider models are not set. Activate Flight Modes using the Device Select screen.

Helicopter flight mode

- NORMAL
- STUNT-1
- STUNT-2
- ▲ STUNT-3
- ▲ STUNT-4
- ▲ HOLD
- ※ ▲ Cannot be used during the initial set up.



Extension of Flight Mode

- ※ STUNT-3 and STUNT-4 are not active by default. It is possible to activate STUNT-3 and STUNT-4 from the "DEVICE SELECT" menu in the System List.
- ※ Also note that "HOLD" is not active by default – it can be activated in the Function List (see "Throttle hold").

TIPS

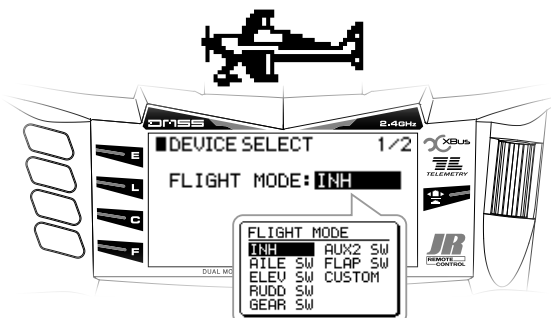
- ※ The following sequence gives the flight mode priority when the various switches are activated. 「HOLD > NORMAL > STUNT-3/STUNT-4 > STUNT-1/STUNT-2」

Airplane flight mode

- ▲ FMOD-0
- ▲ FMOD-1
- ▲ FMOD-2
- ▽ FMOD-3
- ▽ FMOD-4

To utilize Flight mode

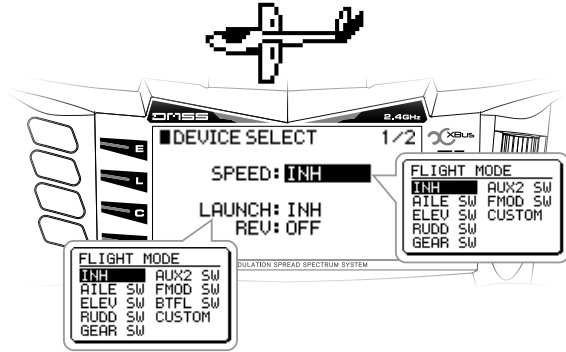
- ※ Airplane flight modes are not activated by default. It is possible to activate these flight modes in the system list, "DEVICE SELECT".
- ▽ This mark is only selectable when the Flight mode has been (CUSTOM) customized.



■ Glider flight mode

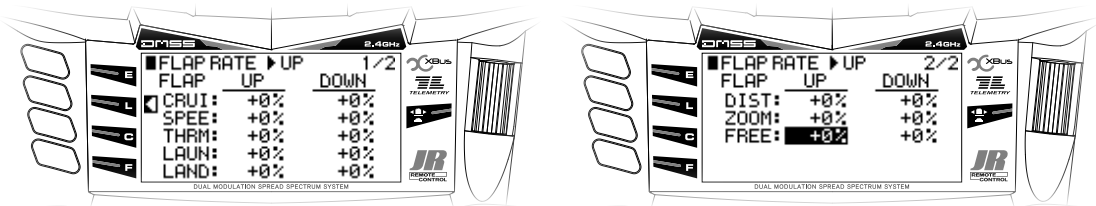
- ▲ SPEED
- ▲ CRUISE
- ▲ THERMAL
- △ LAND
- △ LAUNCH
- ▽ DIST
- ▽ ZOOM
- ▽ FREE

- ※ Glider flight modes are not activated by default. It is possible to activate these flight modes in the system list, "DEVICE SELECT".
- ※ By setting the "SPEED" it is possible to utilize ▲ marked mode which are CRUISE and THERMAL.
- ※ If require to have further flight mode, select "LAUNCH". Depending on selecting the type of the toggle switch, certain flight mode is selectable.
3position switch: Those flight mode which marked with △
2position switch: Only with "LAUNCH" mode is selectable.
Those Flight mode which marked with this ▽ can be selectable upon customized on Flight mode.
- ※ The following sequence gives the flight mode priority when the various switches are activated.
"LAUNCH > SPEED/THERMAL > LAND > CRUISE"



■ Example List of the items which can be selected on each flight mode

Functions which can be modified on each flight mode are digital trims, and settings related to the following functions:



Note:

Each type of aircraft (heli, airplane or glider) uses a different name for each flight mode.

Other function that can be modified in each flight mode are for example.

- ⦿ DUAL-RATE & EXPONENTIAL [D/R&EXP] Page 21
- ⦿ Servo Speed [SERVO SPEED] Page 26
- ⦿ Differential [DIFFERENTIAL] Page 41
- ⦿ Throttle Curve [THRO CURVE] Page 27
- ⦿ Pitch Curve [PITCH CURVE] Page 29
- ⦿ Tail Curve [TAIL CURVE] Page 30
- ⦿ Gyro Sensitivity [GYRO SENS] Page 32
- ⦿ Governor [GOVERNOR] Page 34
- ⦿ Mixing Functions
- ⦿ and more

DUAL-RATE & EXPONENTIAL [D/R&EXP]



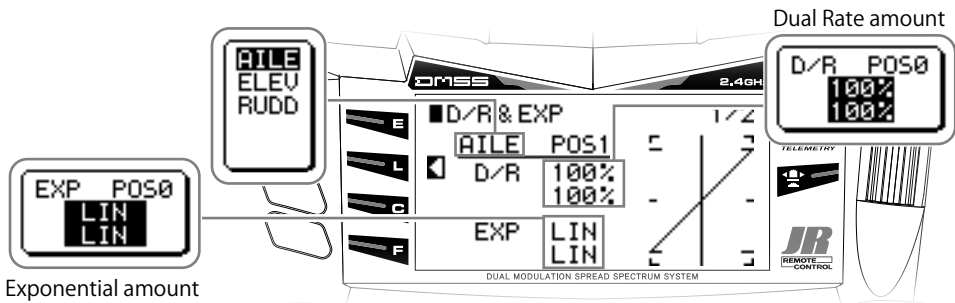
Function Explanation

This function switches aileron, elevator, and rudder control surfaces between different control surface angles and curves, using the Dual Rate switches. By combining the control surface angles with exponential settings, it is possible to carry out various independent settings so that the aircraft response can be changed.

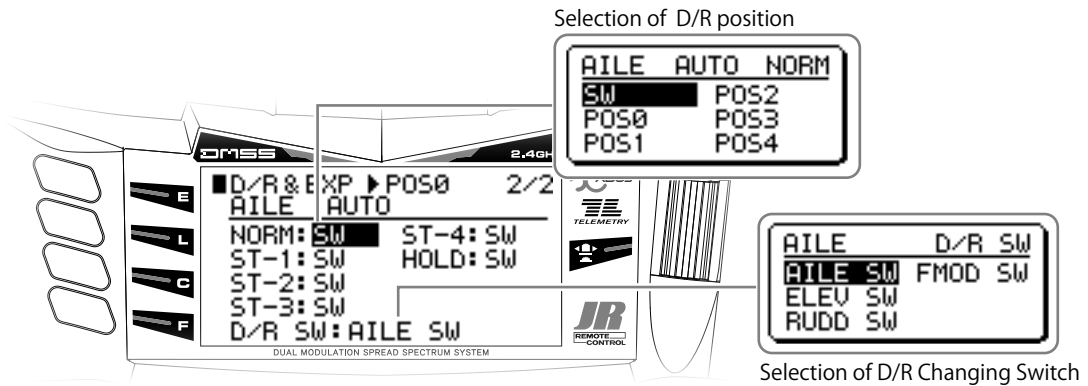
Exponential is a curve adjusting function that logarithmically changes the servo movement in response to the stick action, allowing the movement in the vicinity of the neutral position to be adjusted from mild (+ direction) to quick (- direction) without changing the maximum control surface angle. Adjustments made can be confirmed by looking at the graph on the screen.

Setting Method

Five independent dual rate settings and exponential settings can be set for Aileron, Elevator and Rudder.



- FM-AUTO: (flight mode change)
By flipping the flight mode switch, it is possible to automatically change the dual rate and exponential settings for each flight mode.
- ※ Note that "FM-AUTO" switch selection has a higher priority than "INPUT"
- The dual rate value, Exponential value can be set as 5 values on each Aileron, Elevator and Rudder.



TIPS

- The Dual Rate setting numerical value can be between 0 and 125, and EXPO can be between 0 and ± 100.
- By moving the appropriate control stick, the numerical values can be independently changed for left and right (up and down), so that the control surface angles and curves can be individually adjusted. When the cursor is at the inverse display, the setting values can be modified, and also reset using the CLR key

Caution Note

- Operate the servos carefully to confirm the operational settings before flying.

Travel adjust [TRAVEL ADJUST]

Function Explanation

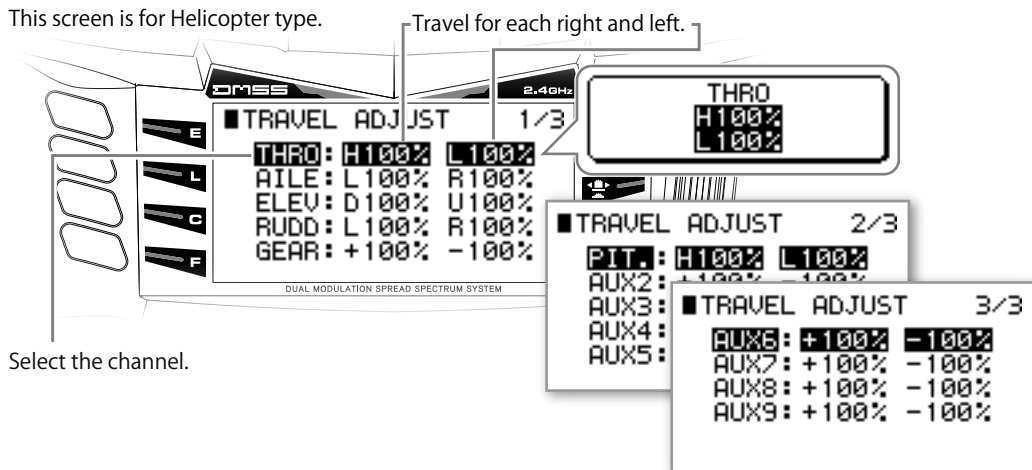
This function allows independent adjustment of the servo left/right (or up/down) movement, for each channel. The adjustment is carried out with reference to the neutral position. Adjustment is possible over an adjusting range between 0 and 150% in each direction. The default value is 100%, and this gives standard servo movement.

Setting Method

Rotate the dial to move to, and select, the channel that you wish to set (inverse display). Then press the dial to display the setting box, and now change the numeric values by rotating the dial.

※ The channel names on the screen will differ according to the model type.

This screen is for Helicopter type.



Caution Note

- Operate the servos carefully to confirm the control surfaces move as expected before flying.

Limit Adjust [LIMIT ADJUST]



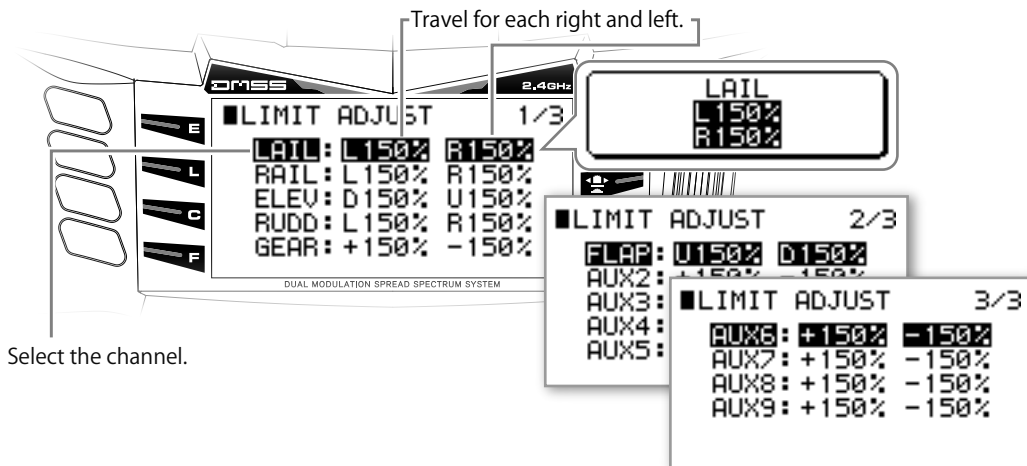
Function Explanation

When multiple channel mixing is used, the resultant servo movement angle may become too large, and an unreasonable force be applied to the linkages. If limit values are set, it is possible to limit the maximum movement of the servos, regardless of programmable mixing, etc.

Setting Method

Set the limit values separately for left/right and up/down directions for each channel (servo). Select the channel using the dial, and press the dial to display the adjustment box.

- ※ The channel names on the screen will differ according to the model type.



Select the channel.

Caution Note

- Operate the servos carefully to confirm the control surfaces move as expected before flying.

Sub Trim [SUB TRIM]

Function Explanation

This allows fine trimming of the servos attached to each channel. This trim should be used as a fine adjustment when the servo horn mounting angle is not 90 degrees with regard to the linkage.

Note that if large amounts of sub trim is used, it will affect the maximum deflection of the servo. It is therefore recommended to use only small values here.

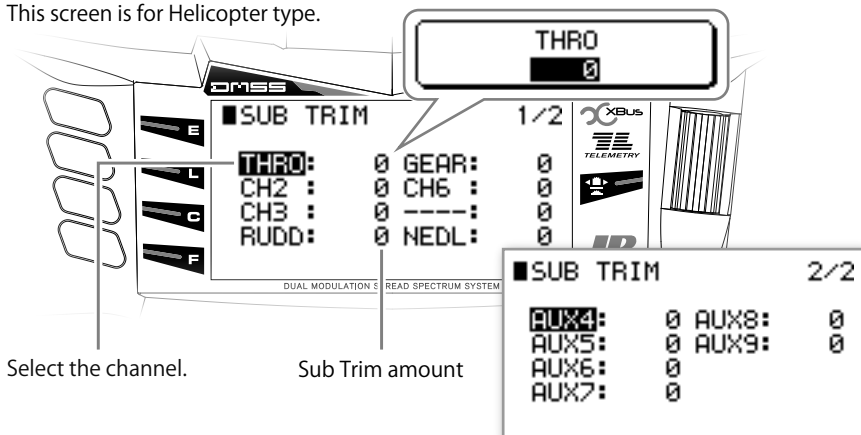
Setting Method

Rotate the dial to move to and select the channel that you wish to set (inverse display). Then press the dial to display the setting box, and carry out the numerical value setting.

※ The channel names on the screen will differ according to the model type.



This screen is for Helicopter type.



Caution Note

- Operate the servos carefully to confirm the control surfaces move as expected before flying.

Reverse Switch [REVERSE SW]

Function Explanation

This function reverses the servo operating direction (pulse change direction) of each channel.

Setting Method

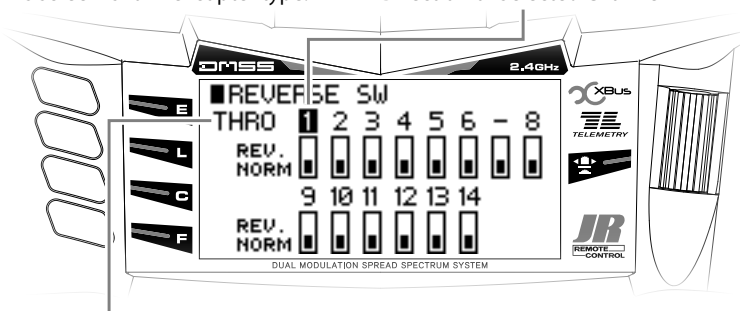
Rotate the dial to move to and select the channel that you wish to change (inverse display). Then press the dial to select the rotation direction. "NORM" is the normal direction and "REV" is the reverse direction. Actually operate the servos and carefully confirm the settings before flying.

※ The channel names on the screen will differ according to the model type.



This screen is for Helicopter type.

Direction of Selected Channel



Select the channel.

IMPORTANT NOTICE

In the situation where the reverse switch setting has been changed the Fail Safe has been set, and this will after affect the Fail Safe operation, it will operate in the opposite direction to the condition that was set.

Accordingly, in the situation where the Fail Safe has operated after the throttle channel has been set to reverse by setting the reverse switch in the transmitter, the servo will be set to the Full High

side, which will be extremely dangerous.

After finishing the transmitter settings, be sure to implement the Fail Safe settings (Match the stick to the position that you wish to set and press the Memory key), and **be certain to carry out operation confirmation.** (Switch off the transmitter once, and check whether the servo movement reaches the correct position.)

Servo Speed [SERVO SPEED]

Function Explanation

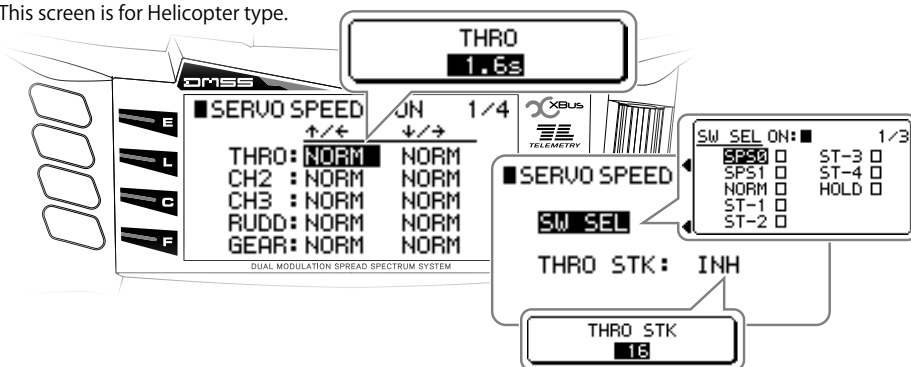
This function slows down the operation speed of the servos independently for each channel. This function should be considered as a speed limiter. The speed setting can be set separately for left/right (up/down). Additionally, the setting can be set to ON or OFF in each Flight Mode, or controlled using optional switches. Further, this function can be turned ON or OFF using a desired throttle stick position (not available for gliders).

Setting Method

Rotate the dial to move the inverse display area and select the channel, then press the dial to display the setting box, and carry out the speed setting. "NORM" is the fastest setting, and the speed can be slowed between 0.1-15.0 seconds. This indicates the time that the servo takes to rotate through 60 degrees. Note there may be some slight variation depending on the servos used.



This screen is for Helicopter type.



TIPS

- Depending on the application, some channels may not be able to have a speed set, and "----" will be displayed.

Caution Note

- When the servo speed has been set, carefully confirm the servo speeds using actual switch operation before flying.

Throttle Curve [THRO CURVE]

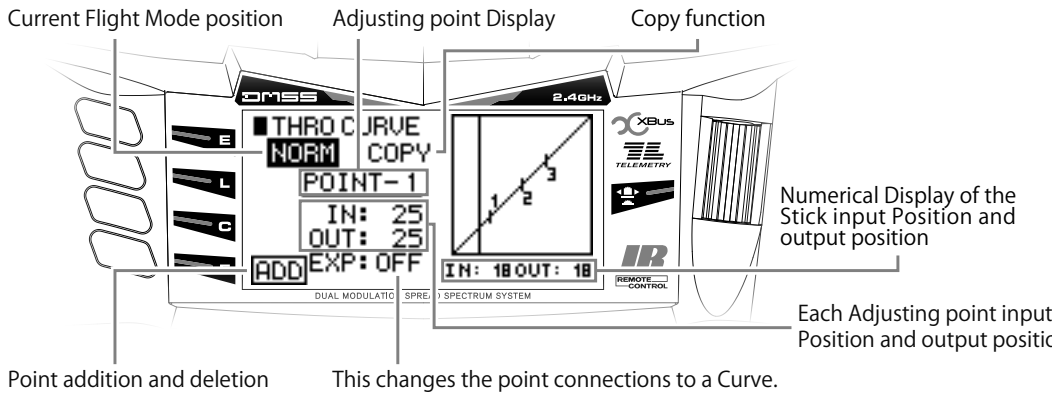


Function Explanation

This function adjusts throttle servo operation in response to throttle stick operation. The servo position can be set independently for a maximum of 7 point positions. In addition, an EXPO (exponential) function is also incorporated to allow smooth throttle stick connection of each of the points. This function is available in each Flight Mode for helicopters (maximum 5), and 2 modes for airplanes.

Setting Method

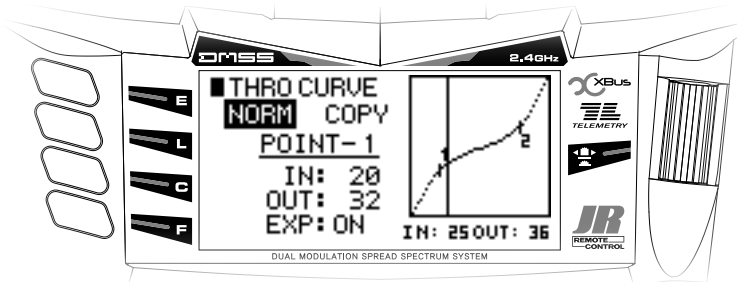
There are three initial curve points set at the slow, center, and high positions. To add a point, set the stick to the desired position and press the "ADD" key. In the situation where a point is to be deleted, this should be carried out using the "DEL" key. To change values at each point, rotate the dial to move to and select the point that you wish to change (inverse display). Then press the dial to select and change the numerical value.



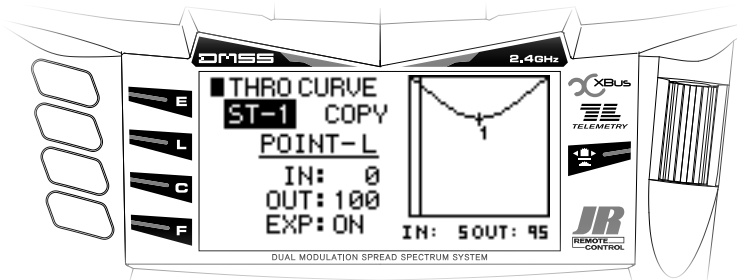
For Helicopter

There are five (5) flight modes (i.e. Normal, Stunt 1-4) available for helicopter throttle curves. Set each throttle curve as desired for the particular flight condition.

Normal mode

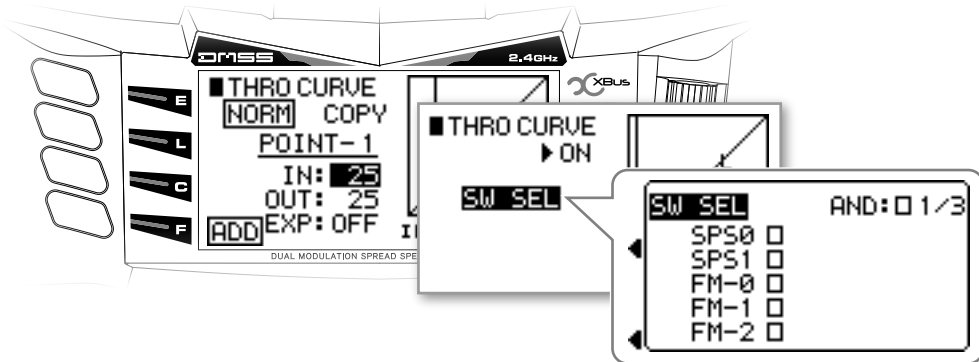


Stunt mode



For Airplane

There is one kind of throttle curve available and it is possible to change the curve at any time with a toggle switch, flight mode switch or the throttle stick.



TIPS

- The numerical value "IN" shows the position of the throttle stick and the numerical value "OUT" shows the output value to the servo.
- Adjustment is possible over an adjusting range between 0 and 100% for each of the Slow or High (up or down) directions. The graph may be further changed using the Hover Throttle and the Throttle Trim functions.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

Pitch Curve [PITCH CURVE]

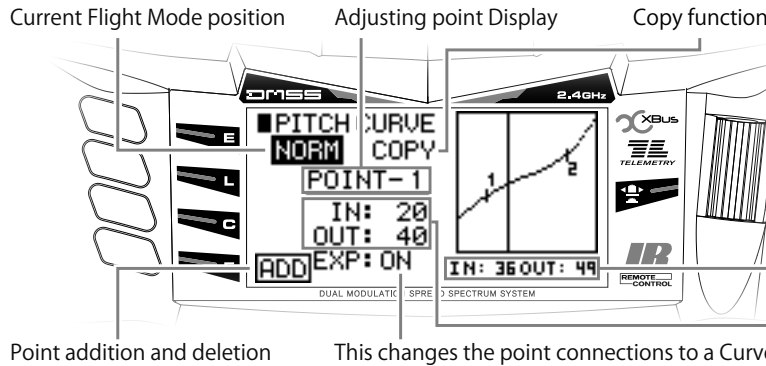


Function Explanation

This function adjusts pitch operation in response to throttle stick operation. The servo position can be set independently for a maximum of 7 point positions. In addition, an EXPO (exponential) function is also incorporated to allow smooth throttle stick connection of each of the points. This function is available in each Flight Mode for helicopters (maximum 6), and 2 modes for airplanes.

Setting Method

There are three initial curve points set at the slow, center, and high positions. To add a point, set the stick to the desired position and press the "ADD" key. In the situation where a point is to be deleted, this should be carried out using the "DEL" key. To change values at each point, rotate the dial to move to and select the point that you wish to change (inverse display). Then press the dial to select and change the numerical value.



Caution: Points 1, 2 and 3 will be influenced in the Hovering pitch trim and also the graph. In addition, the High pitch trim will also be influenced in Point H.

Numerical Display of the Stick input Position and output position

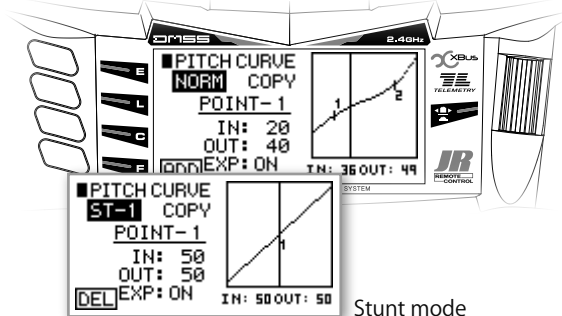
Each Adjusting point input Position and output position

Point addition and deletion

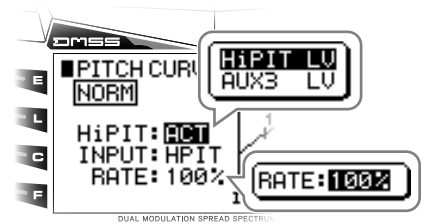
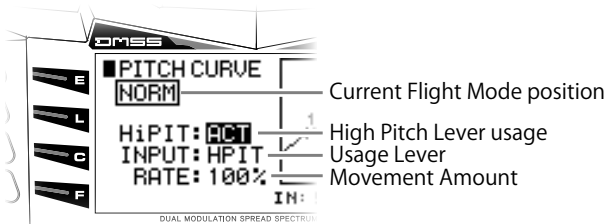
This changes the point connections to a Curve.

- High Pitch trim (HiPIT)
High Pitch Trim Lever
Using the lever on the side of the transmitter, pitch adjustment at the high point is possible. This function is initially inhibited – it must be activated to use. After activating, select the lever either on the left or right side of the transmitter using "INPUT". The lever should normally be left in the center position, and should be used for dynamic adjustment.

Normal mode



Stunt mode



TIPS

- The numerical value "IN" shows the position of the throttle stick and the numerical value "OUT" shows the output value to the servo.
- Adjustment is possible over an adjusting range between 0 and 100% for each of the slow to high (up and down) directions.
- Points 1, 2, and 3 will be influenced by the Hover Pitch Trim and this will be seen on the graph. In addition, the High Pitch Trim will influence Point H.

Caution Note

- After the setting, operate the servos and carefully confirm each of the Flight Mode settings before flying.



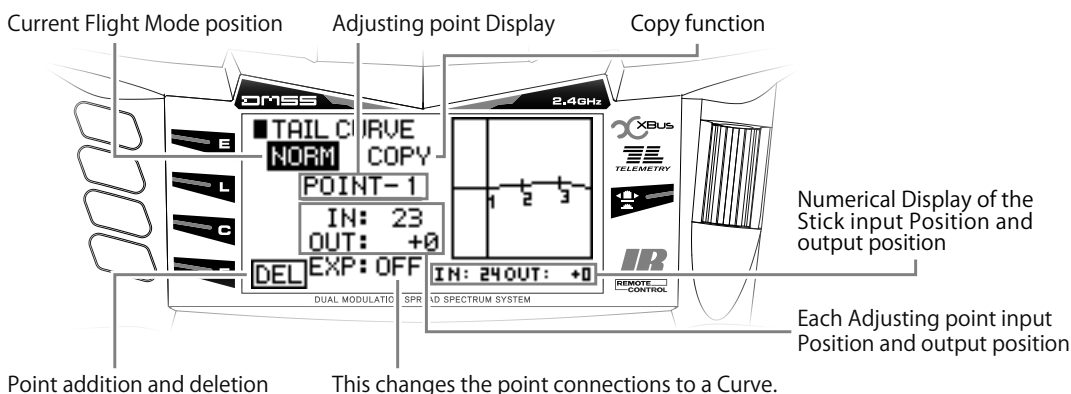
Tail Curve [TAIL CURVE]

Function Explanation

This is the mixing between the pitch and the tail servo. It is also known as revolution mixing. It allows setting of the mixing amounts separately up and down from the hovering point. Intermediate points can also be established in each direction, so that setting can be freely carried out. In addition, Mixing Rate setting, which is convenient for detailed adjustment of stunt positions, will also be possible. A maximum of 5 types of setting curves can be set in each Flight Mode.

Setting Method

The numerical values of each point can be set. The initial input setting points are three points set to the slow, center, and high sides. To add a point, set the stick to the desired position and press the "ADD" key. In the situation where the point is to be deleted, this should be carried out using the "DEL" key. For the adjustment, Set the point by stick and change the value by scrolling the dial for "IN" or "OUT".



In Put Pitch (PITCH)

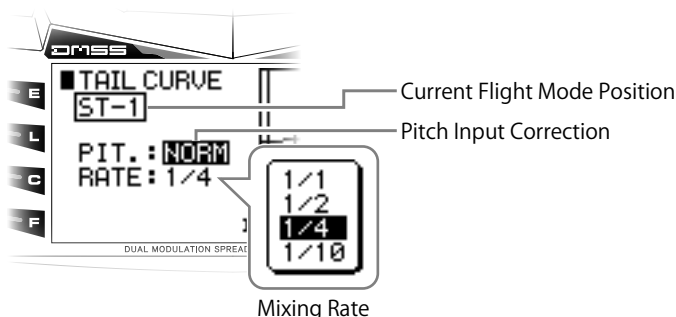
The pitch information that is input to the mixer can be selected from the following two types.

- ① "NORM": This is the stick position referenced to the curve set using the Pitch Curve function.
- ② "ORIG": This is the stick position itself not considering the pitch curve.

MIXING RATE ON STUNT MODE (RATE)

This display will be shown when the Flight Mode is set to a stunt position. Even though the graph and output figures will remain the same, an action will be implemented that reduces the actual mixing amount by the multiplier described below. This is the stunt mode common multiplier.

- "1/1": × 1
- "1/2": × 0.5
- "1/4": × 0.25
- "1/10": × 0.1



Caution Note

- When using a Tail Lock Gyro (Heading Lock), this function will not be required since the tail will be automatically corrected. Each of the setting values must be set to zero.

Throttle hold [THRO HOLD]



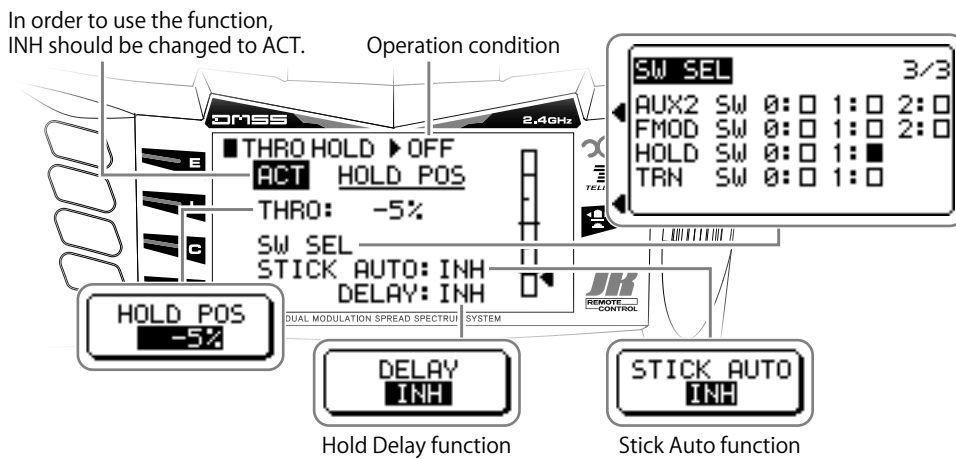
Function Explanation

This function is for autorotation landings – it holds the Throttle Servo at a low position. Using a selected switch, the engine can be cut, or fixed at an optional slow position. Further, there is also a Stick Auto function that allows switching of the servo to the Hold position when the stick is lowered to a preset position.

Setting Method

This function is “INH” by default. Set the function to ACT. Then adjust the hold position as required. The Hold switch is used by default, but this selection can be modified

By default, the “HOLD SW” is allocated to POS1. It is possible to allocate this switch to any desired switch locations.



- Stick Auto Function (STICK AUTO)
When “STICK AUTO” is set, the servo will change to the Hold position when the stick is lowered past a predetermined position. To deactivate this function simply turn off the allocated switch. Initially this function is inhibited. To activate this function, move the cursor to “INH”, and press the dial to “ACT”. Move the cursor to the inversed display next to STICK AUTO, Move the throttle stick to desired position and press the “STO” key to set the position (a numerical value between 0-100 will be displayed on the inversed display).
To “INH” this function, press the CLR key while the display is inversed.
- Hold delay function (DELAY)
It is possible to set a “DELAY” to prevent a sudden increase in engine rotations when the Hold switch is set to OFF. The duration of the delay can be set between 0.1sec to 2.0sec.
If the Hold Delay is set, any throttle setting in the Servo Speed function will be cancelled.

TIPS

- By setting throttle hold active, this function acts like an additional flight mode. It is possible to set dedicated Dual rates, Pitch Curve, etc to this function.

Caution Note

- After the setting, operate the servos and carefully confirm each of the Flight Mode settings before flying.

■ Gyro Sensitivity [GYRO SENS]



■ Function Explanation

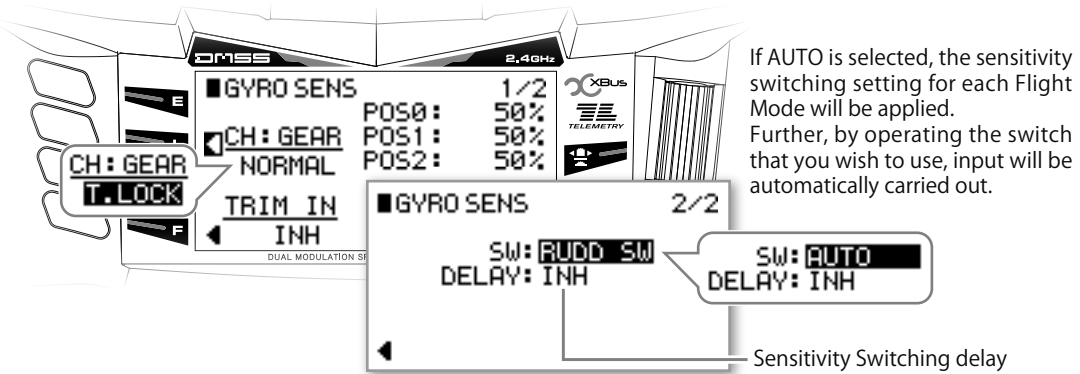
This function controls the gyro sensitivity using the GEAR channel, and the Auxiliary (AUX) channel if required. It allows adjusting the gyro sensitivity from the transmitter. Further, it supports "Dual Gain" as employed in JR's G7000 where two channels are required. Additionally, the use of two gyro units is also possible. In addition, it supports 3 axis gyros (such as JR TAGS01), with separate gains for yaw, pitch and roll axis. The sensitivity switching of each gain can be with individual switches, or combined using the Flight Mode switch.

■ Setting Method

It is necessary to allocate the Gyro Sensitivity to a channel using "DEVICE SELECT" in the System List. Set "OUT" as "GYRO" by activating the function.

Select the switch position for changing the gyro sensitivity and move the cursor to each position to set the sensitivity on the display. If "AUTO" is selected, the sensitivity switching setting for each flight mode will be applied.

There are two gyro sensitivities available - "NORMAL" and Tail Lock (T.LOCK) - choose the type depending on your application.



If AUTO is selected, the sensitivity switching setting for each Flight Mode will be applied. Further, by operating the switch that you wish to use, input will be automatically carried out.

- Gyro sensitivity Switching delay (DELAY)

To avoid excessive servo hunting when switching the gyro sensitivity from a low sensitivity to higher sensitivity setting, (e.g. when the main rotor blade rpm is not stable) it is possible to set a delay on this function.

Note: During switching, the time will be delayed only in the high sensitivity direction.

- Trim Input Function (TRIM IN)

By using the Trim Input, it is possible to change the gyro sensitivity values using a Trim Lever. Therefore, it is possible to easily adjust the sensitivity during flight.

- When two individual channels have been selected for Gyro sensitivity, it is possible to select from the following two modes.

- "TWO GYRO"

It is possible to allocate two individual gyro sensitivities, and the Gyro sensitivity switching can occur on one shared switch.

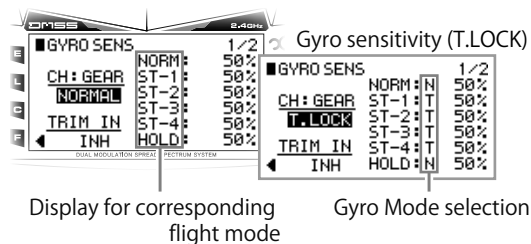
- "DUAL GAIN"

In this mode, one channel is allocated for "NORMAL" and the other channel to "TAIL LOCK SENSITIVITY".

- ※ For 3 Axis gyro applications (such as the JR TAGS01) three separate gain channels can be used. Each sensitivity for yaw, pitch and roll axis can be set using individual switches, or combined onto the flight mode switch. The gyro sensitivities can also be changed to Normal or Stunt Modes when using the JR TAGS01.

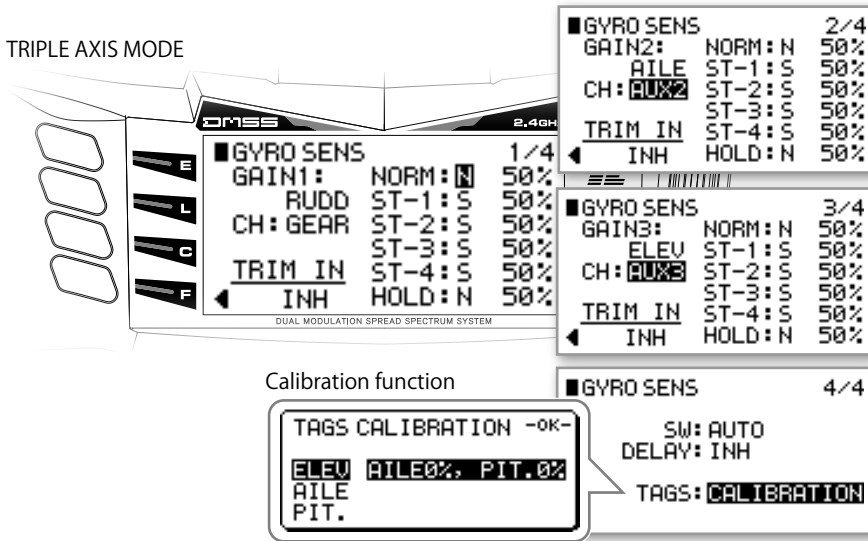
- "Calibration for 3 Axis Gyros"

The JR 3 Axis Gyro system (TAGS01) as used for Flybarless R/C helicopters requires "CALIBRATION" prior to flying. This is required to recognize the type of CCPM being employed, and learn the servo travel ranges used. Calibration requires precise gimbal stick movement of one function at a time (Elevator or pitch stick up & down, and Aileron stick right to left). If, for example, the aileron stick is pushed by mistake during elevator calibration, the calibration will be incorrect. In order to avoid this problem, the calibration function allows single channel calibration.



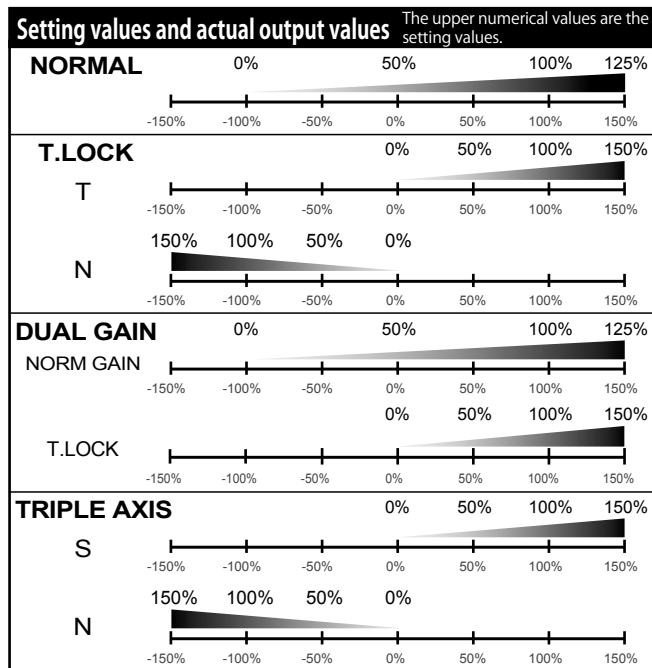
Display for corresponding flight mode

Gyro Mode selection



TIPS

- Follow and understand the details of the TAGS01 3 axis gyro manual completely prior to using this calibration function.



N = NORMAL T = TAIL LOCK S = STUNT

- By using the Trim Input function, it is possible to change the gyro sensitivity values using Trim Lever. Therefore, it is possible to easily adjust the sensitivity during flight.

Caution Note

- Be sure to understand the Gyro manual thoroughly to allow correct use of this function.
- Carefully check the direction of the tail servo and be sure that everything works correctly before flight.



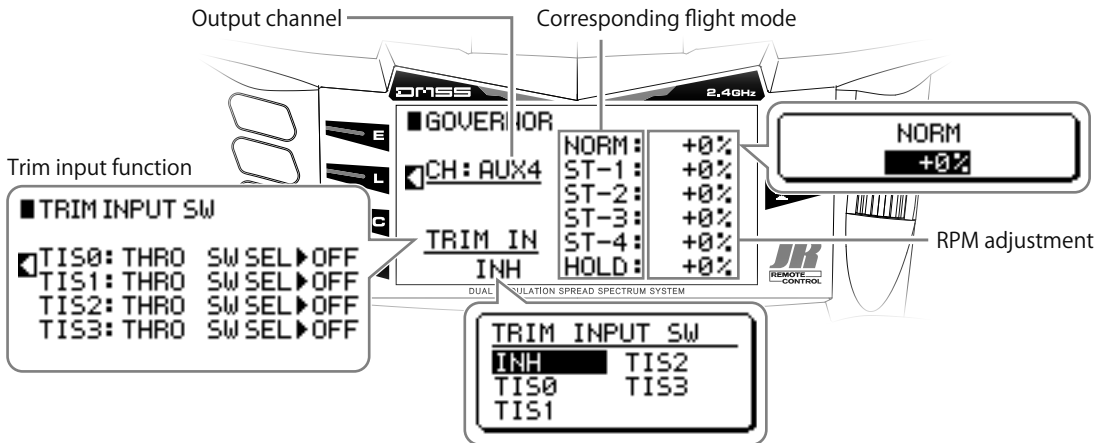
Governor [GOVERNOR]

Function Explanation

A governor maintains the rotor rotation speed at a uniform value. This function sets the rotation speed of the Governor to aid in stable flight. Different rpm settings can be made separately for each Flight Mode.

Setting Method

If the output “OUT” of an auxiliary channel is not set to “GOV” before using the function, the display in the Function List will be shown as non-usable. In addition, a Trim Input switch function can also be used. On the screen, set the rotor rotation speeds for each Flight Mode. Select the desired Flight Mode by rotating the dial, then press the dial to display the box for numerical value adjustment. Note that because the setting from the transmitter is a numeric adjustment, the actual rotation speed should be set and confirmed by the governor.



- Trim Input Function (TRIM IN)
By using the Trim Input, it is possible to change the governor sensitivity values using a Trim Lever. Therefore, it is easy to adjust the rpm during flight.



- By using the Trim Input, it will be possible to change the gyro sensitivity values using the Trim Lever. Therefore, it will be possible to easily adjust the sensitivity even during flight.

Caution Note

- Be sure to understand your Governor manual thoroughly to allow you to use this function correctly.

Swash Mixing [SWASH MIX]



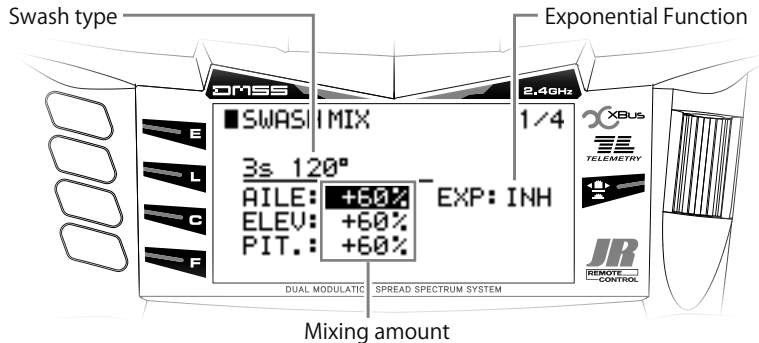
Function Explanation

This function sets the mixing relating to the swash plate and swash plate servos (1-4) to allow coordinated control of the helicopter. This swash mixing is essential for helicopters that incorporate CCPM systems. CCPM is a type of pitch mixing in which the servos are directly linked to the swash plate. In this transmitter, 7 types of swash plates can be selected. Match the "SWASH TYPE" in the System List with your helicopters servo configuration. An E-ring function is also incorporated that easily limits the swash maximum angle.

Setting Method

Set the "SWASH TYPE" according to the helicopter's swash plate configuration. The "SWASH TYPE" selection is in the System List, and should be chosen before proceeding to set the swash mix.

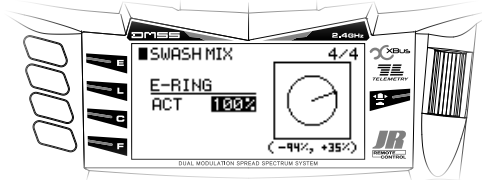
The default settings for the Swash Mix are +60% on Aileron, Elevator and Pitch. If necessary, adjust the mixing amount according to the type of helicopter and servo setup. Press the dial to display the setting box, and then set the direction and the numerical value adjustment.



- Exponential Function (EXP)
By activating this function, the servo's non-linear output is modified to be more linear in motion.

- E-Ring Function (E-RING)
By activating this function, the e-ring electronically corrects the swash to move in the same angle in all directions. The operation of the stick and e-ring can be confirmed on the graph. The diameter of the circle is the swash tilt angle, which can be set as desired.

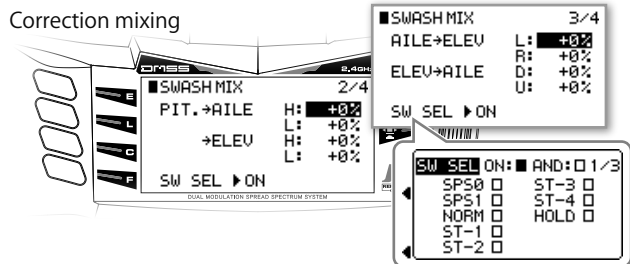
E-Ring Function



- Correction mixing
 - PIT->AILE,->ELEV
This mix corrects tilt of the swashplate in the aileron and elevator axis when the pitch stick is moved up and down. Adjustment of the mixing amount can be carried out separately to the front and rear and to the left and right. The mix can be switched ON and OFF of using a switch or flight modes as desired.

○ AILE->ELEV, ELEV->AILE
This is used to correct interactions where aileron and elevator movement influence each other. The aileron and elevator mutual mixing amount can be separately adjusted. The switching ON/OFF of the mixing on this screen can be set using a switch or flight modes as desired. It is also possible to use TRIM INPUT to adjust the mix during flight using a trim lever.

Correction mixing



- Trim Input Function (TRIM IN)
By using the Trim Input, it is possible to change the mix values using the Trim Lever. Therefore, it is possible to easily adjust the mix during flight.

TIPS

- If the servo direction is incorrect, it is possible to set the mixing amount in a negative direction to achieve an appropriate setting.
- The setting value in this function should be between 0 to ± 125. If the mixing amount is too much and you are not able to achieve the desire servo throw, adjust the servo horn hole position (with a practical range of 40-70%) outwards to have more throw.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.



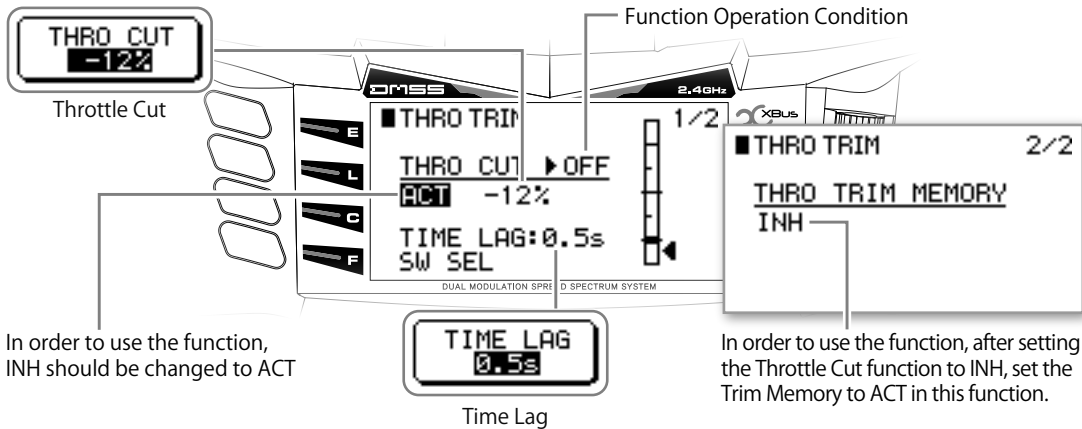
Throttle trim [THRO TRIM]

Function Explanation

This function sets the Throttle Trim movement, and additionally a Throttle Cut function is provided for cutting the engine. There is a Trim Memory function for cutting the engine using the Trim. Note that for airplanes, an Idle Adjust function is also incorporated that allows separate detailed setting of the idle position.

Setting Method

If the Throttle Cut is set to ACT, the Trim Memory will be forcibly set to INH. On the screen rotate the dial to move to and select (inverse display), then press the dial to set the item.



- Throttle Cut Function (THRO CUT)

The Throttle cut can be used by setting it to "ACT". Initially the switch is allocated to "TRN SW", POS1. It is possible to allocate this switch to any desired switch location. Set the Throttle Cut to the desired position.

- Time Lag (TIME LAG)

This function is to avoid the sudden stopping of the engine if the throttle cut switch is activated in error. This is especially useful when using the momentary switch (Trainer switch). It is possible to use this momentary switch as timer switch at the same time as throttle cut. When the time lag function is activated, throttle cut only activates when the switch is held on for a certain duration. The timer can be activated by a momentary action as usual. The time lag duration can be set between 0.5 to 2 seconds.

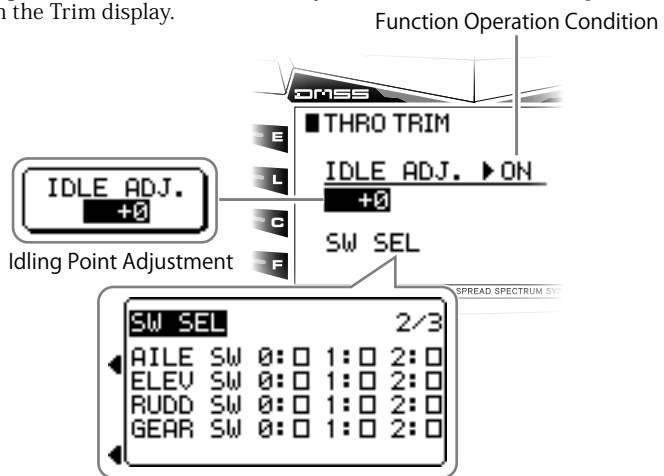
- Throttle Trim Memory (THRO TRIM MEMORY)

When the Trim is lowered in a single action, the trim position immediately prior to the movement will be memorized, and when the trim is raised again, the trim will automatically return to the memorized position. The memorized position will be marked on the Trim display.

- Idle Adjust (IDLE ADJUST)

※ For Airplane Mode only

The idle position when the throttle stick is at the "Slow" position can be given a separate setting using a switch. It is possible to set up landing with idle "DOWN", and normal flying with idle "UP".



TIPS

- Please carefully confirm the linkage does not jam when the carburetor is closed.

Caution Note

- Throttle Cut will only work when the helicopter Flight Mode is set to "NORMAL".

Throttle Mixing [MIX → THRO]



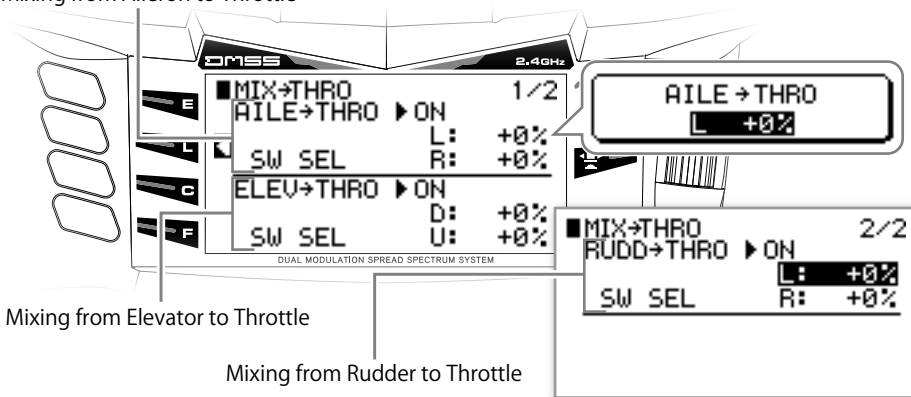
Function Explanation

When operating various controls on a helicopter, the rotor rotation may be reduced due to loading. This function is a mixing function for implementing a correction for this effect. It will allow corrections of the rotor rotation speed normally carried out by a governor. Each mix (from aileron, elevator, and rudder) can be controlled from a separate switch.

Setting Method

Each mix from Aileron, Elevator, or Rudder can be switched on and off using an independent switch. After setting the switches, please confirm the display of the operation function. Then set the mix amounts to the throttle for each of the stick operation directions. The mix should be set to whichever direction the rotor rotation increases when the operation is carried out.

Mixing from Aileron to Throttle



Mixing from Elevator to Throttle

Mixing from Rudder to Throttle

TIPS

- As a rough guide to values, it is recommended that the aileron and elevator should be set to 10%-30%, and the rudder should start from L10%/R15%.

Caution Note

- When using a governor, this function is not required, and the numerical values should all be set to zero.
- Actually operate the servos and carefully confirm the settings before flying.

■ Flight Mode Delay [FLIGHT MODE DELAY]

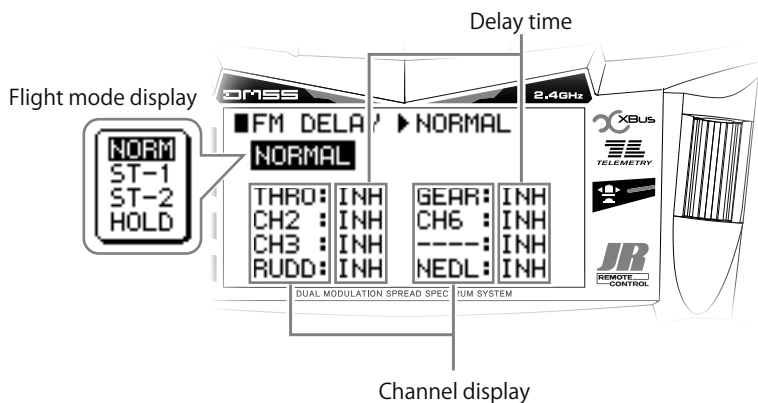


■ Function Explanation

When the Flight Mode is changed, the servos may move suddenly, causing a jerky reaction in flight. To prevent this, it is possible to set a time to each channel separately, during which the servo will move slowly to the new position when switching Flight Modes. This can be set separately in each Flight Mode.

■ Setting Method

Rotate the dial to select the desired channel in the setting screen, then press the dial to display the time setting box. The time displayed here will be the time for moving to the servo position of the Flight Mode that is currently being displayed.



TIPS

- If a delay is added to a channel being used for Governor or Gyro, or some function related to another delay function which has been set, the combination might not work together, depending on the exact settings.

■ Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

FLAP SYSTEM [FLAP SYSTEM]



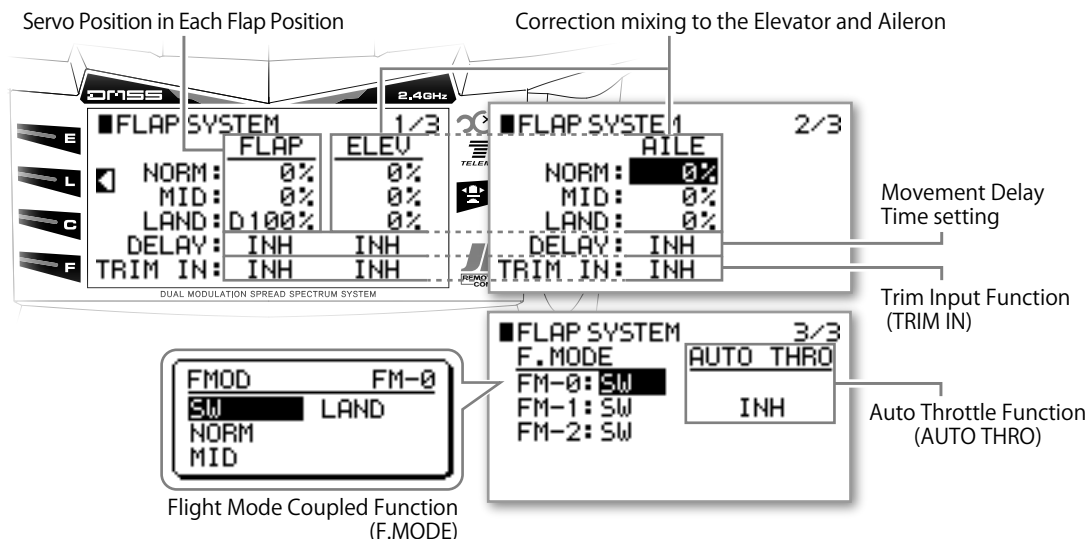
Function Explanation

The flaps can be controlled in three stages using a switch. A flap delay is also possible. Additionally, there is a function that carries out mixing to the elevators. There is also an Auto Throttle function that automatically lowers the flaps when the throttle stick is lowered.

Setting Method

If the flap channel output has not been set to "SYS" in the Device Select menu, the function will be displayed as being unusable.

It is also possible to control the flaps with a switch set by the input device for the flap channel using Device Select. Input the flap position value and if necessary arrange the delay value depending on the NORM, MID and LAND switch position.



- Auto Throttle Function (AUTO THRO)
By activating "AUTO THRO" it enables control of the flaps automatically depending on throttle stick position. Set the stick at the desired position and press the dial to display the box to set the position. Above the point where "AUTO THRO" has been set, "NORM" mode is selected. Below this point the flaps should be activated to the desired position automatically.
- Flight mode coupled function (F.MODE)
It is possible to set the flap position related to the selected flight mode.
- In order to off-set the pitching action upon activating the flaps, it is possible to set a mix to elevator. And it is also possible to set a correction in roll by mixing to the Ailerons when the flaps are deployed. **Additionally, Aileron can be function as flaps, deflecting both downwards, or both upwards.(Crow braking)**
- Trim Input Function (TRIM IN)
By using the Trim Input, it is possible to change the flap amount values using a Trim Lever. Therefore, it is possible to easily adjust the flap trim during flight.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.



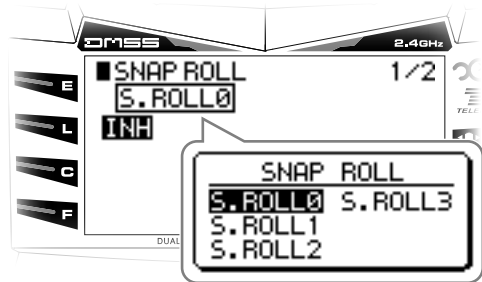
SNAP ROLL [SNAP ROLL]

Function Explanation

This function is useful for executing Snap Rolls. There are four types of presets, and normally activation is carried out using the Snap switch. However, Stick switches are also incorporated that automatically enter a Snap Roll when the stick is operated by a fixed amount. Further, it is also possible to select which Flight Modes the Snap switches are active in.

Setting Method

There are four types of Snap roll available, and they are initially set as "INH". Be sure to "ACT" the function before setting the numerical values for Aileron, Elevator and Rudder. Please refer to below chart which shows the default values.



Preset

PRESET

		AILE	ELEV	RUDD
S.ROLL0	Left UP	L100%	U100%	L100%
S.ROLL1	Left DOWN	L100%	D100%	R100%
S.ROLL2	Right UP	R100%	U100%	R100%
S.ROLL3	Right DOWN	R100%	D100%	L100%

- SNAP ROLL SWITCH (SNAP SW)

The Snap switch (SNAP SW) is initially set to "INH" - it should be set to "ACT", and then set the device (momentary switch, trim switch or stick position switch).

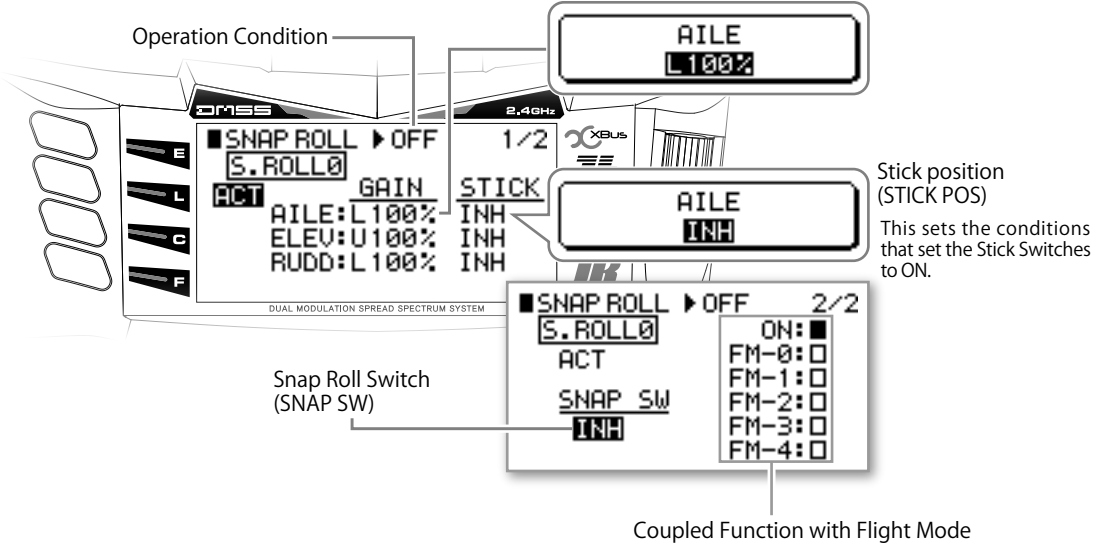
- Stick Position Switch (STICK POS)

The Stick Position Switch (STICK POS) is initially set to "INH". It should be set to "ACT". Set the stick position to activate this switch function.

- Coupled function with Flight Mode

After setting up the Snap Roll switch and Stick Position Switch, it is possible to select each one of the switches to be active or not depending on the flight mode. Initially the switches are active in all flight modes.

surface when movement has taken place.



Caution Note

- This function cannot be used when the radio is set as "MASTER" while using the trainer system with another radio.
- Actually operate the servos and carefully confirm the settings before flying.

Differential [DIFFERENTIAL]



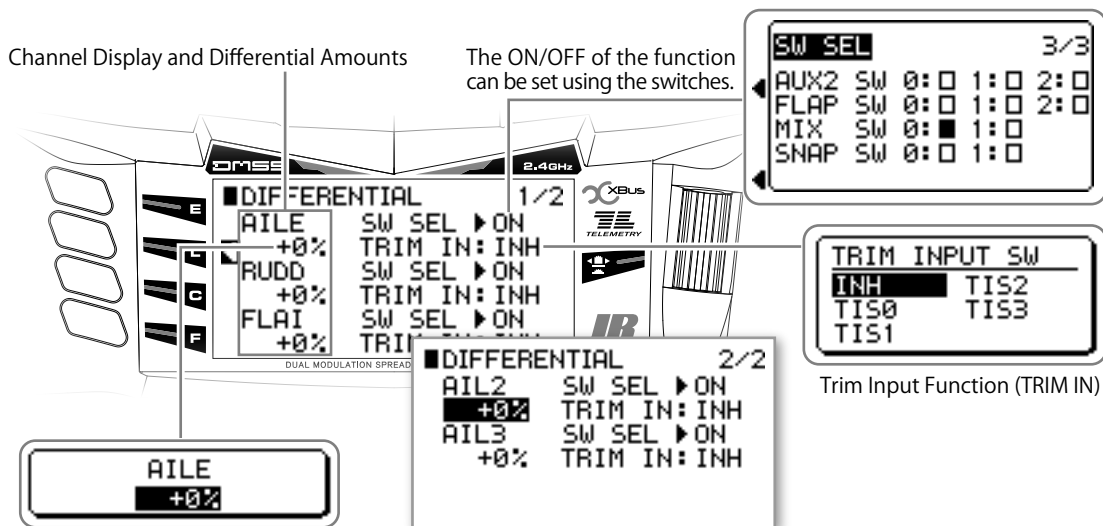
Function Explanation

This function can be used when the aileron, rudder, and flap channels have been set to Dual Channel (two servos are set to each control surface). Taking ailerons as an example, if the wing is a high-lift style, when the ailerons are moved up and down by the same angle, greater air resistance will be generated on the underside, causing the aircraft to yaw in the opposite direction to the intended turn. Differential acts to correct this effect by moving the down going aileron less than the up going aileron. On a glider there will be situations during, for example, butterfly movements where differential is not necessary. To prepare for this, the Brake function cancels the differential when the Spoiler stick is lowered.

Setting Method

For Airplane

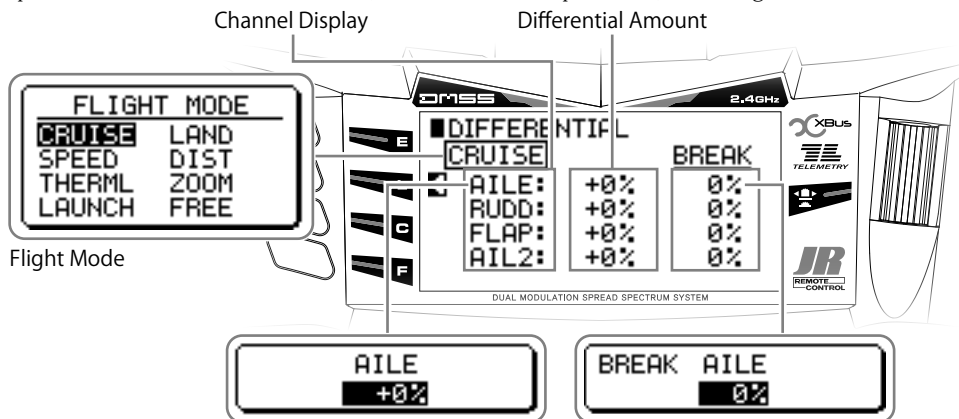
It is possible to set "one" differential on each control, at any desired switches Or to use the flight mode switch to turn on or off.



- Aileron Differential (AILE)
 Setting can be achieved for the below wing types.
 FLAPERON
 DELTA
 4-AILE
 DUAL AILE
 DUAL ELEV
 ※ On 4-Aileron or 6-Aileron usage, each control can be paired with following setting separately.
 - ① R-AILE1(Right Aileron 1), L-AILE1(Left Aileron 1) Setting item: AILE
 - ② R-AILE2(Right Aileron 2), L-AILE2(Left Aileron 2) Setting item: AIL2
 - ③ R-AILE3(Right Aileron 3), L-AILE3(Left Aileron 3) Setting item: AIL3
- Rudder Differential (RUDD)
 Settings can be activated for the below Wing types.
 V-TAIL
 DUAL RUDD
- Flap Differential (FLAP)
 Settings can be activated for the below Wing types.
 DUAL FLAP
- Trim Input Function (TRIM IN)
 By using Trim Input, it is possible to change the Differential amount using a Trim Lever. Therefore, it is possible to adjust the differential during flight.

For Glider

It is possible to set each control surface (Aileron, Rudder, Flap & Brake) to the flight mode switch.



- Aileron Differential (AILE)
 - Settings can be activated for the below Wing types.
 - Flaperon (FLAPERON)
 - 4 Aileron (4-AILE)
 - ※ On 4-Aileron usage, each control can be paired with following setting separately.
 - ① R-AILE1(Right Aileron 1), L-AILE1(Left Aileron 1) Setting item: AILE
 - ② R-AILE2(Right Aileron 2), L-AILE2(Left Aileron 2) Setting item: AIL2
- Rudder Differential (RUDD)
 - Settings can be activated for the below Wing types.
 - V-TAIL
 - DUAL RUDD
- Flap Differential (FLAP)
 - Settings can be activated for the below Wing types.
 - DUAL FLAP
- Brake Differential Function (BREAK)
 - The Spoiler Stick position sets the amount of brake. The stick upper limit will be the minimum (0%), while the lower limit will be the maximum (100%).

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

Aileron to Rudder Mixing [AILE → RUDD MIX]



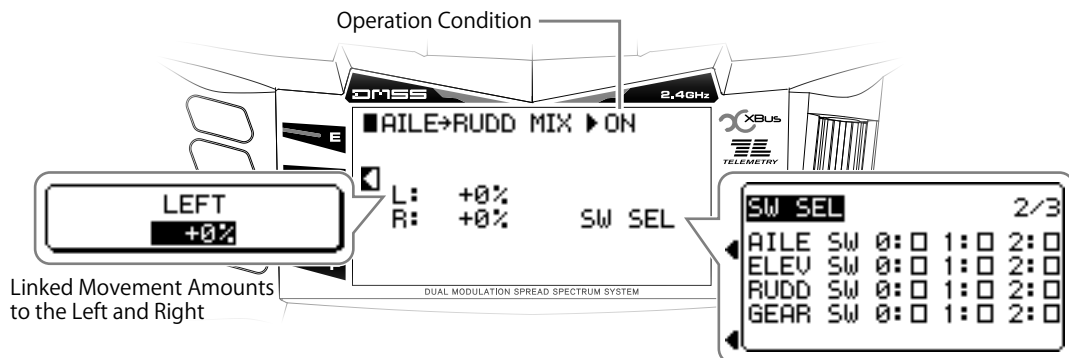
Function Explanation

This function allows smooth coordinated turns for scale model aircraft. In addition, in glider models, the Break function automatically releases this mixing when rudder or elevator operation is sensed.

Setting Method

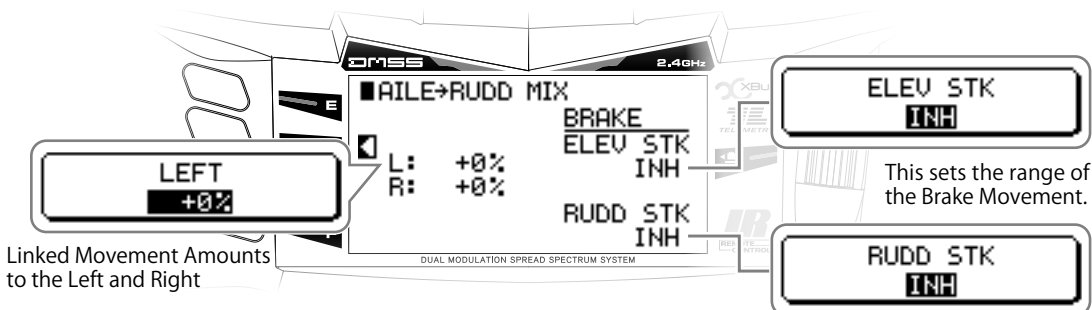
For Airplane

Aileron to Rudder mixing can be set independently on Right and Left. It is possible to activate with any desired switch. Or you can use the flight mode switch to turn On or Off.



For Glider

It is possible to set independent Mixing for right and left Aileron to Rudder in each flight mode. Input the desired mixing amount for each flight mode.



- Break Function (BREAK)
The "BREAK" setting on the elevator and rudder stick releases the mixing.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

■ Aileron to Flap Mixing [AILE → FLAP MIX]

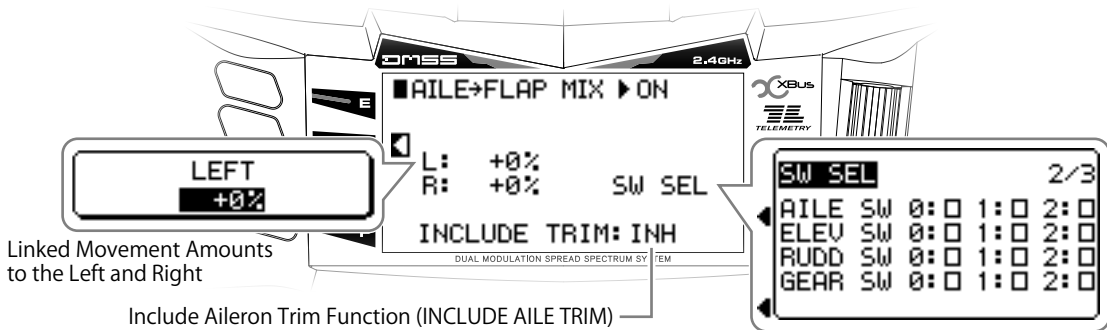


■ Function Explanation

This function mixes the aileron operation to the Flaps. This allows maneuvering using only Aileron to minimize the generation of air resistance when you wish to speed up the roll rate.

■ Setting Method

In order to activate this function, it is necessary to set "DUAL FLAP" under "WING TYPE" on the System List. The mixing amount from Aileron to Flap can be set separately for both the left and right. It is possible to allocate a switch to the desired position, or use the flight mode switch to control this mix. It is also possible to include trim amount of the Aileron to the mixing.



- Include Aileron Trim Function (INCLUDE AILE TRIM)

This function can include the Aileron trim with Aileron to Flap Mixing. The initial setting is "INH" – activate as necessary.

■ Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

■ Elevator to Flap Mixing (ELEV → FLAP MIX)

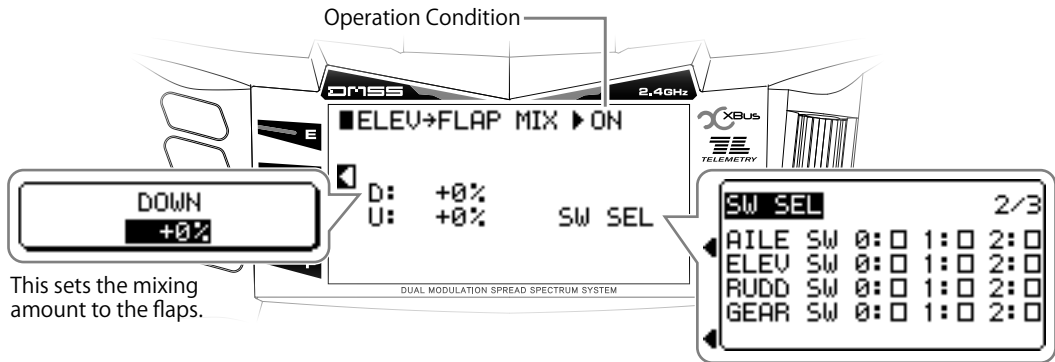


■ Function Explanation

This function mixes elevator operation to flaps, for so-called 'air combat flaps' (snap flaps).

■ Setting Method

The mixing amount from Elevator to Flaps can be set separately for both up and down movement. It is possible to allocate the switch to a desired position, or use the flight mode switch to control this mix.



■ Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

Rudder to Aileron /Elevator Mixing [RUDD → AILE/ELEV MIX]

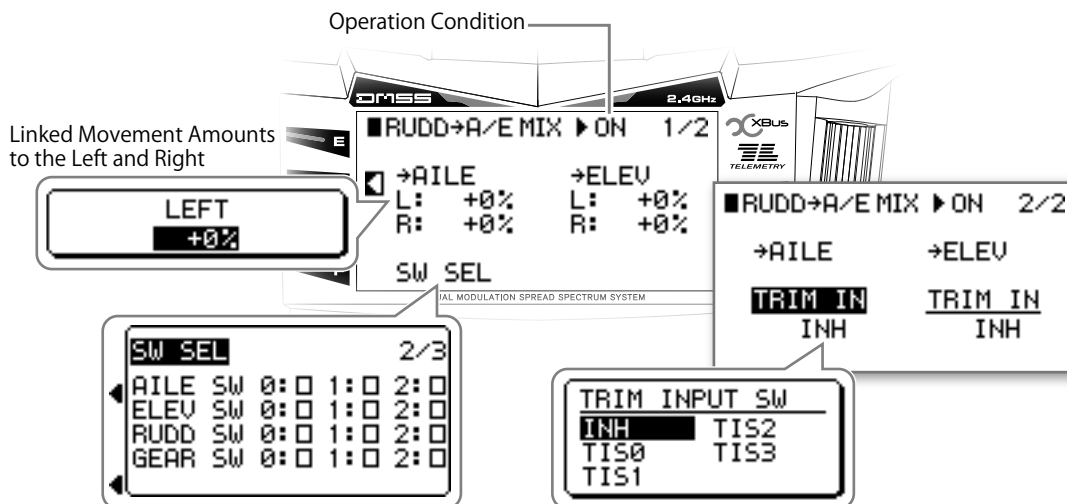


Function Explanation

This function mixes Rudder operation to the Ailerons and Elevators. This is convenient for removing biases in knife-edge flight. In addition, a Trim Input Switch convenient for making adjustments during flight can be used.

Setting Method

The mixing amounts from Rudder to Aileron and Elevator can be set separately for left and right as two independent settings. It is possible to allocate the switch to a desired position, or use the flight mode switch to change between two settings.



- Trim Input Function(TRIM IN)
By using Trim Input, it is possible to change the mixing amount using a Trim Lever. Therefore, it is possible to adjust the mixing during the flight.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

Balance [BALANCE]



Function Explanation

The "BALANCE" functions is used to correct for individual servo characteristic to equalize the travel of each control. This is useful when using Six Ailerons, Four Ailerons, Dual Elevators, and Dual Flaps. It is useful when more than two servos are used per control surface.

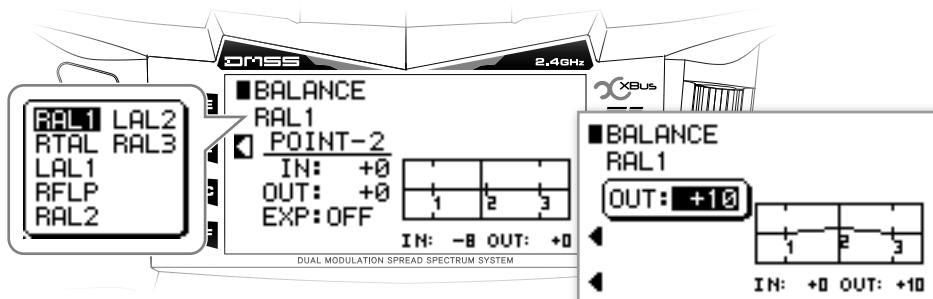
Setting Method

The initial Balance setting points are three points set to the slow, center and high sides. To add a point, set the stick to the desired position and press the "ADD" key. In the situation where the point is set to be deleted, this should be carried out using the "DEL" key. For the adjustment, Set the point by stick and change the value by scrolling the dial for "IN" or "OUT".

For Airplane

Setting can be achieved for the below Wing types.

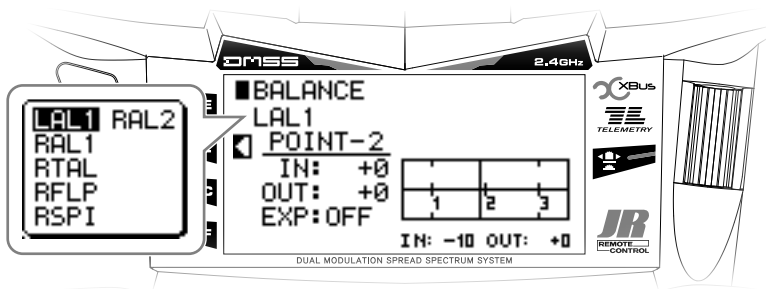
- Flaperon (FLAPERON), Dual Aileron (DUAL AILE)
- It is possible to correct the right Aileron's servo movement, based on the left Aileron's servo movement.
- Tail-less Wing (DELTA)
- It is possible to correct the right Aileron's servo movement based on left Aileron's servo movement.
- ※ The actual meaning of "DELTA" is a defined wing shape, and not a tailless airplane. However, JR does call tailless airplanes deltas (eg the F-102 or Dassault Mirage III).
- Four Aileron airplane (4-AILE)
- It is possible to correct the outside two Aileron's servo movement and inside two Aileron servos based on the left outside Aileron servos and inside Aileron servo movement.
- Six Aileron airplane (6-AILE)
- It is possible to correct the Outside Left aileron (LAL3) as a base, Middle Left aileron (LAL2), Inside Left aileron(LAL1), Outside Right aileron(RAL3), Middle Right aileron (RAL2)and Inside right aileron(RAL1) servos.
- V-tail (V TAIL)
- It is possible to correct the right V-tail 's servo movement based on the left V-tail's servo movement.
- Dual Elevator (DUAL ELEV)
- It is possible to correct the right elevator's servo movement based on the left elevator's servo movement.
- Four Elevator (4-ELEV)
- It is possible to correct the Outside Left Elevator(LEL2) as a base, Inside Left Elevator(LEL1),Outside Right Elevator(REL2) and Inside Right Elevator(REL1)servos.
- Dual Rudder (DUAL RUDD)
- It is possible to correct the right rudder's servo movement based on the left rudder's servo movement.
- Dual Flap (DUAL FLAP)
- It is possible to correct the right flap's servo movement based on the left flap's servo movement.



For Glider

Setting can be achieved for the below Wing types. Set the Wing type in the system list.

- Flaperon (FLAPERON)
It is possible to correct the right Aileron's servo movement based on the left Aileron's servo movement.
- ※ This transmitter is set as Flaperon as the default wing setting for Glider.
- Four Aileron Glider (4-AILE)
It is possible to correct the Outside Left aileron (LAL2) as a base, Inside Left aileron(LAL1), Outside Right aileron(RAL2), and Inside right aileron(RAL1) servos.
- V-tail (V TAIL)
It is possible to correct the right V-tail 's servo movement based on the left V-tail's servo movement.
- Dual Elevator (DUAL ELEV)
It is possible to correct the right elevator 's servo movement based on the left elevator's servo movement.
- Dual Rudder (DUAL RUDD)
It is possible to correct the right rudder's servo movement based on the left rudder's servo movement.
- Dual Flap (DUAL FLAP)
It is possible to correct the right flap 's servo movement based on the left flap's servo movement.
- Dual Spoiler (DUAL SPOI)
It is possible to correct the right spoiler 's servo movement based on the left spoiler's servo movement.



TIPS

- For each servo, five points can be adjusted. This allows not only exact matching of the servo neutrals, but also matching of additional points including full travel. These points are set numeric values to exactly match servo and control surface throw.
- By using the exponential function, it is possible to arrange the transition curve smoothly.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.



Flap Rate [FLAP RATE]

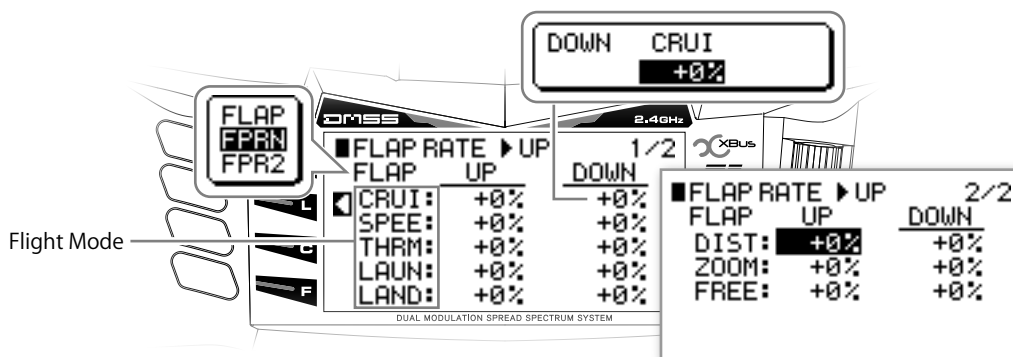
Function Explanation

This function sets the maximum up and down movement of the flap control surface angles independently in each Flight Mode when using the Flap Lever. It is also possible to set the flap amount against Aileron movement.

Setting Method

Initially, it is set at 0% (default for each flight mode). To change this setting, adjust the numeric value. The switch for this function is initially set as Flap lever on the side of the transmitter. This can be changed using the Device Select menu.

To set the travel amount on FLAP, Select "FLAP"



To set the Flap operation on the Aileron, Select "FRPN" or the "FRP2"

- ※ In case of using Four Aileron, it is also possible to pair them independently and set as following.
 - ① R-AILE1(Right Aileron 1), L-AILE1(Left Aileron 1) Setting item: FRPN
 - ② R-AILE2(Right Aileron 2), L-AILE2(Left Aileron 2) Setting item: FRP2

TIPS

- When operating a competition aircraft where there is concern regarding mis-operation of the Flap switches or levers, set the outputs to "0". Flap operation can still be carried out using other mixing – for example using the camber system.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

Motor System [MOTOR SYSTEM]

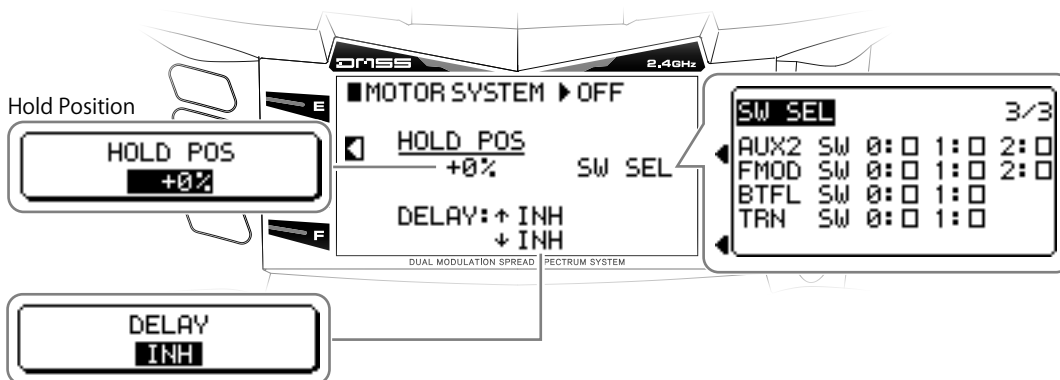


Function Explanation

This function is used to switch off (HOLD) the motor channel by using the Gear switch (default) or by selecting various flight mode positions. By using the Delay function, it is possible to smoothly run the motor from low r.p.m. to higher r.p.m. in a linear transition (Note: The speed controller must have a linear transition to activate this function).

Setting Method

In order to activate this function, it is necessary to set the "GEAR" channel or "AUX3" channel as "MOTO" under the System List.



Hold Delay (HOLD DELAY)

- Hold Delay (HOLD DELAY)
UPPER ARROW (↑): Delay time before switching on the motor.
DOWN ARROW (↓): Delay time before switching off the motor.

Caution Note

- Be sure to set the "WARNING" function under the system list and be aware of the motor starting unexpectedly. It is very easy to accidentally turn on a switch and the motor start, and not immediately realize why.
- Set the speed controller to run the motor and carefully confirm the settings before flying.

Camber system [CAMBER SYSTEM]



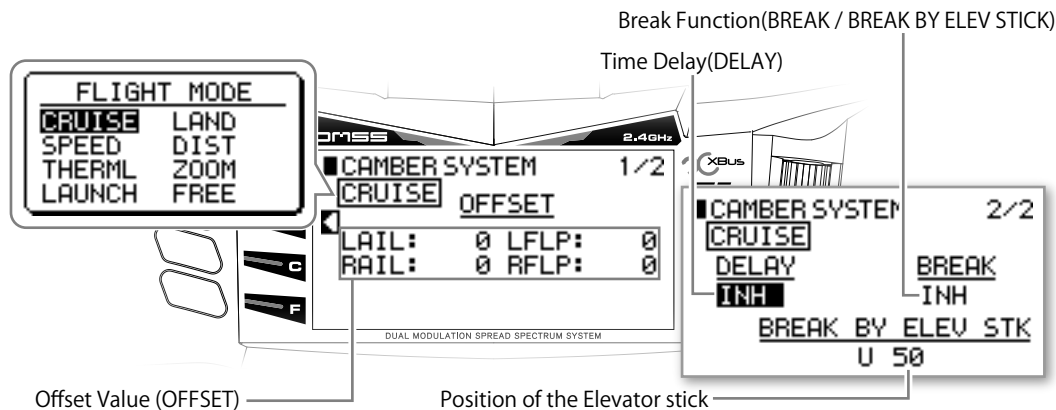
Function Explanation

It is possible to set an airplane (Glider in particular) which has full span ailerons or flaps + ailerons on the main wing giving full-span moveable control surfaces. These control surfaces can be moved up and down simultaneously to change the wing type. Because changing the wing type can vary the rate of descent and the drag, it is possible to change the flight endurance and the glide ratio. These settings can be set for each Flight Mode. In addition, because the delay time during transition can be adjusted, the aircraft will not react wildly. During this delay time, rapid cancellation is possible using the elevator stick. (Break Function)

Setting Method

There are two ways of setting the amount of Camber offset in each flight mode. One is to set it using this function, and the other method is changing the Trim position.

It is possible to set the numerical value of Camber off-set with a desired "DELAY" and "BREAK" in the menu.



- Off Set Value (OFFSET)
 - Set the Offset value on both FLAP and Flaperon for each flight mode.
 - FLAPERON
 - Set each Flaperon value for the Left Aileron and Right Aileron.
 - FLAP
 - Set single Flap using "FLAP", For "Dual Flaps" set the "LFLP" (Left Flap) and "RFLP" (Right Flap) values independently.
 - Four Aileron (4-AILE)
 - "LAL1"(Left Aileron 1), "RAL1"(Right Aileron1), "LAL2"(Left Aileron2), "RAL2"(Right Aileron2), Set the Off set on these Aileron independently.
- Time Delay (DELAY)
 - It is possible to set the time delay when switching between different flight mode on "Off Set Amount" or the "Trim Amount". "INH" is no Time Delay. The time delay duration can be set between 0.1 to 6.0seconds. "HOLD" means without Time Delay.
 - Flap Trim [FLAP TRIM]
 - Flaperon Trim [FPRN TRIM]
 - Elevator Trim [ELEV TRIM]
- Break Function (BREAK / BREAK BY ELEV STICK)
 - This sets the range of the Break function using the Elevator Stick. This can be "INH" or "ACT". Because the delay operation will be discontinued even if the stick exceeds the numerical value only momentarily, it allows you to respond to sudden changing circumstances. Set the position (numerical value) for the elevator where it should "ACT" using the "BREAK BY ELEV STICK" function.

TIPS

- To prevent mistaken operation of the Camber Position (Trim Position) that has been set in each of the Flight Modes, the sensitivity of the trim can be set to zero. After setting the number of steps of the FLAP and FPRM Trim in the Trim System screen in the System List, these should be set to zero. By doing so, even though the Trim lever will not actually operate, the set positions will remain memorized.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.



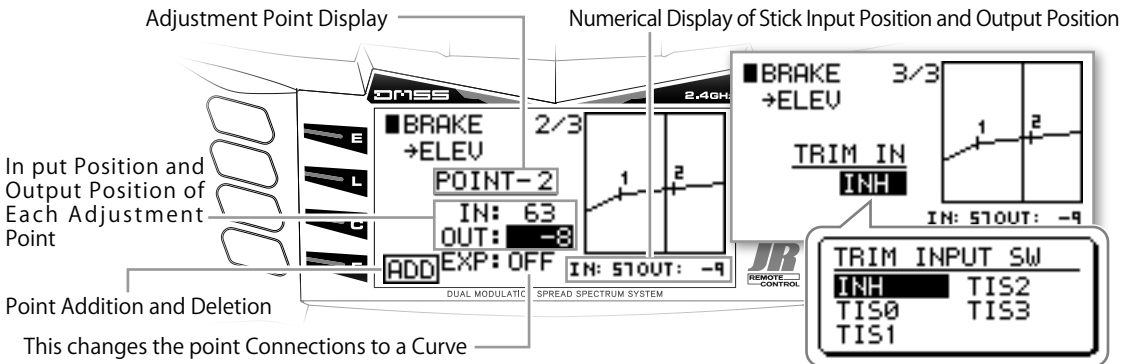
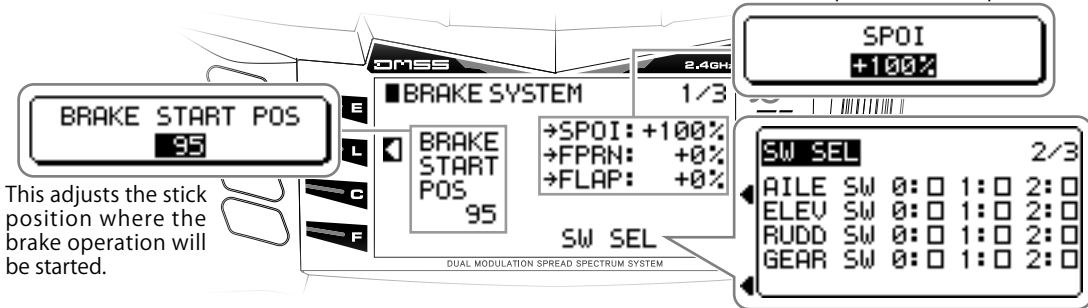
Brake system [BRAKE SYSTEM]

Function Explanation

This function creates air brakes using the spoilers, ailerons, and flaps. The function is also known as Butterfly mixing and Crow mixing. When the spoiler stick is lowered, the flaps will lower and the ailerons will be lifted. Looking from the front of the aircraft you will see the whole wing will no longer generate lift, and will have a huge amount of drag. A blind band can be set to prevent mis-operation when operating the spoiler stick. In addition, the trim correction provided by the elevators can be finely adjusted to the corresponding air brake angle using curve points.

Setting Method

This shows the movement angle when the spoilers are incorporated.



First set the mixing amount provided from Spoiler Stick operation to the ailerons and flaps. Then adjust the Stick position where this mixing will be started.

- **Brake Start Position (BRAKE START POS)**
This adjusts the stick position where the brake operation will be started. It is possible to arrange a 'blind band' to prevent mis-operation when operating the spoiler stick.
- **Spoiler Travel Adjustment**
By setting the "→ SPOI" it is possible to set the Spoiler travel in response to Spoiler Stick position. As a default, the Spoiler is set to the AUX2 channel.
- **Trim Input Switch (For Elevator)**
The Trim Input switch can be used to trim the elevator. Individual points can be adjusted using the Trim Input on the multi-point curve. The point "0" is the maximum brake amount. With the Trim Input Switch it is easy to adjust the precise settings during the flight.

TIPS

- In quick summary: The brake is set as spoiler by default; this is because AUX2 is set as the Input device "SPOI STRK" in Device Select. In another words, it is possible to allocate another switch or lever to control the Brake function under the System List.

Caution Note

- When this function is fully operated, the servos will move a considerable amount. At this time, care is required to avoid applying an unreasonable force to each of the control surfaces. Use the Limit Adjust function to apply limits to servo movement to avoid damaging the control surfaces or servos.
- After programming these settings, operate the servos and carefully confirm each of the Flight Mode settings before flying.

Flaperon Mixing [FLAPERON MIX]



Function Explanation

This function allows the setting of Flaperon mixing.

"Aileron -> Flap Mixing" This mixes from Aileron to flap, to use the flaps as Ailerons - therefore the roll rate can be increased.

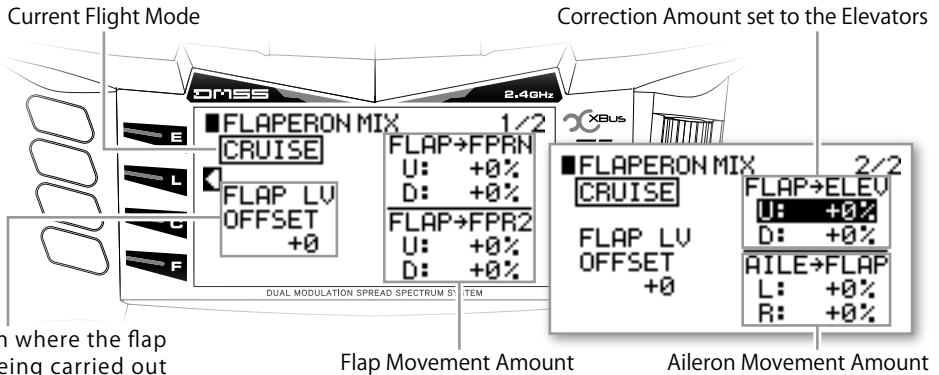
"Flap -> Flaperon Mixing" This mixes from Flap to Aileron, to use the Ailerons as Flaps.

"Flap -> Elevator Mixing" This mixes from Flap to Elevator, to correct Pitch variation caused by flap extension.

Setting Method

- "Aileron -> Flap Mixing"

It is possible to set right and left control surfaces independently for each flight mode.



In the situation where the flap operation is being carried out using a lever, it will be possible to offset the mixing reference point.

- "Flap -> Flaperon Mixing", "Flap -> Elevator Mixing"
It is possible to set right and left control surfaces independently on each flight mode.
- Flap Lever Offset (FLAP LV OFFSET)
If a "LEVER" is set as the Input Device for the Flap channel, the Lever's center (neutral position) can be offset if necessary.

TIPS

- Regarding this Mixing function from Flap, since the amount of travel is based on the Flap channel mixing from a Slide lever or switch, an offset amount for the Flap trim or Camber is not included.
- The Initial setting for the Flap rate is set to 0%. When mixing from Flaps, Set the Flap travel amount using the Flap Rate first, before setting this mix.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

■ Elevator to Camber Mixing [ELEV → CAMB MIX]

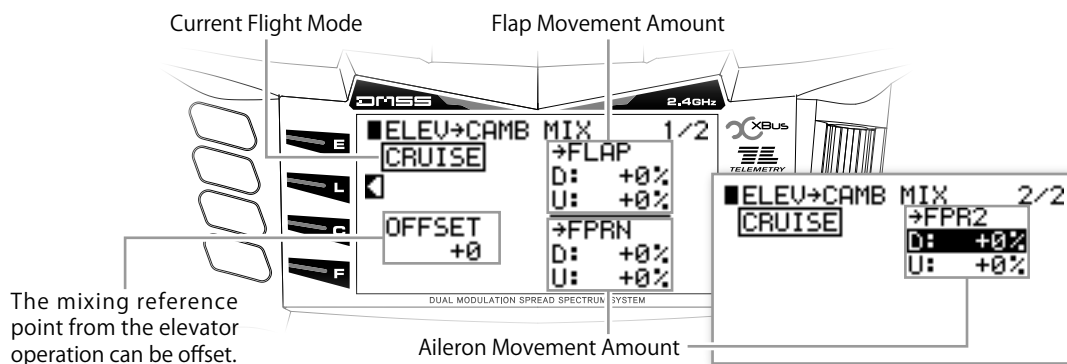


■ Function Explanation

This function applies mixing to the main wing camber (Center line of Airfoil) based on elevator operation. Adjustment of the wing root flaps and wing tip flaperons separately in both up and down direction is possible. This function can be set for each Flight Mode.

■ Setting Method

The mix amount to the Flaps and Flaperons can be set on each flight mode, with elevator up and down directions set individually.



- Mixing Offset on reference point (OFFSET)
By utilizing offset, the reference point where the mixing starts can be optimised.

TIPS

- The so-called air combat flaps (snap flaps) can be used in aircraft with main wings that have a 3-servo (channel) structure. To maximise stability, reducing the mixing amount to the wing tip ailerons rather than the wing root flaps will cause an effect that reduces wing twisting and achieves improved stability.

■ Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

■ Rudder to Spoiler Mixing [RUDD → SPOI MIX]

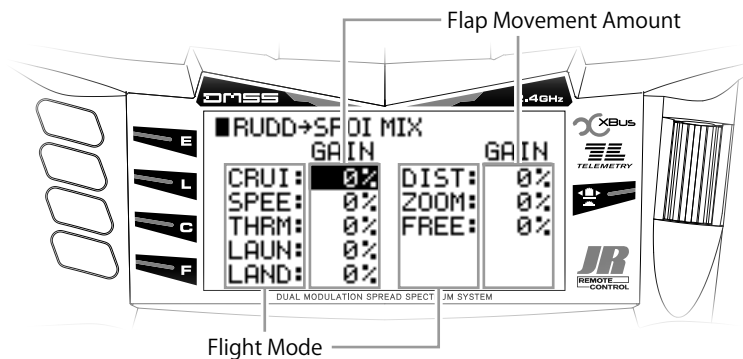


■ Function Explanation

This function emulates rudder operation using spoilers when the aircraft is equipped with dual spoilers. This yaw method is also known as drag rudder. According to the rudder operation, the left and right spoilers alternately operate.

■ Setting Method

It is essential to first set up DUAL SPOI in "WING TYPE" under the System List in order to use this function. It is possible to set up individual mix amounts for each flight mode.



TIPS

- On a large large-sized aircraft that is equipped with spoilers on its main wing, if the spoilers are jointly used with the rudder it is very effective for yaw axis control.

■ Caution Note

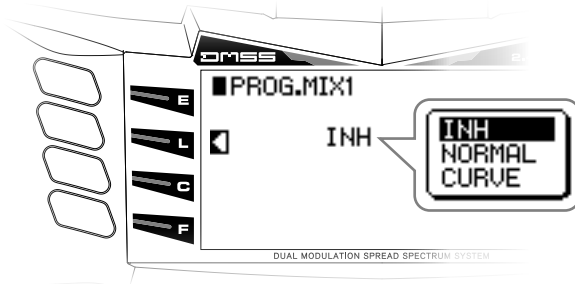
- Actually operate the servos and carefully confirm the settings before flying.

Program Mixing [PROGRAM MIX 1-6]

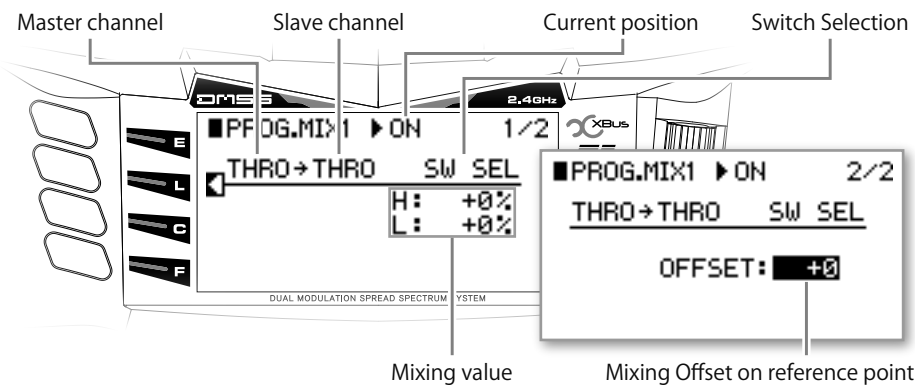
Function Explanation

If a mixing function is required that is not already incorporated in the transmitter, six program mixing systems are provided for use. These can be used to freely structure your own mixes. For this mixing, either simple normal mixing or curve mixing that allows setting of a curve using multiple points can be selected.

Setting Method



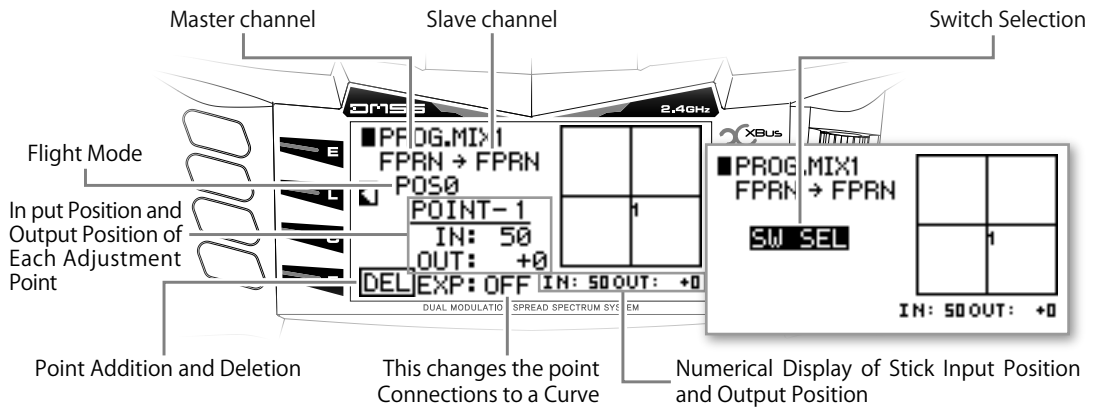
- Normal mixing and Curve mixing
 With Helicopter models, there is only one (1) available mixer which can be activated by switch or by flight mode. On Airplane and Glider models, there are two (2) mixers available that can be activated by switch or by flight mode.
 - Selection of the Master Channel and Function of Master Include
 Select the Master Channel for inputting the program mix. The channel name may be different depending on the type selection (please refer to chart 1 below).
 There is an option available to include or not include any trim or other mixing to the program mixing in regards to the Master channel.
 - Slave channel Selection
 Select the Channel for outputting the mix. The channel name may be different from the default depending on the type selection (please refer to chart 2 below).
 There is an option available to include or not include any other mixing with the program mix in regards to the Slave channel.
 - Throttle stick (Coupling function) (THRO STK) Only for Airplane
 It is possible to switch between two desired positions using the throttle stick. Initially this is set to INH. Activate the function as necessary.
- Normal Mixing
 By default, this is set to "INH". Select Normal for using this Program Mixing. To "INH" this function, move the cursor to the Master/Slave channel selection, then press the CLR key.



- Mixing Reference Point Offset (OFFSET)
 By setting an OFFSET, the mixing Reference Point can be changed to the desired Mixing point on the Master Channel.

- Curve Mixing

By default, this is set to "INH". Select CURVE for using this Program Mixing. To "INH" this function, move the cursor to the Master/Slave channel selection, then press the CLR key.



- Curve Point Setting

It is possible to set up to seven (7) mixing curve points at desired positions. Initially, there are three curve points set - a Low point, Center point and High point. To add more points, select the Master channel and press the ADD key. Or to delete a point, use the DEL key. To change the value at a point, move the cursor to the location where you wish to make the change then press to inverse the display, and input the numeric value.

- Exponential Function (EXP)

By setting the Exponential, each point connection become smooth and mild.

TIPS

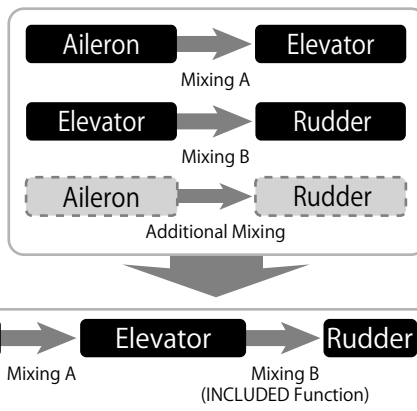
- By activating the Exponential function, it is possible to smooth the transition between points on the curve.

■ Name of the Master Channel and its purposes.

Explanation of the “INCLUDE” function.

■ INCLUDE

If there are several sets of Mixing set on the program mixing, there is no connection between those Mixing each other. If the “INCLUDE” setting is used provided, it is capable to include relevant mixing to be set in one Mixing to avoid complexity, It simplifies the mixing set up. As an example, Right drawing shows Mixing set up in order to reduce certain tendency of the airplane. Say there is a Mixing Aileron to Elevator and Elevator and Rudder mixing independently. However on this mixing there is no connection between Aileron to the Rudder, so it require to set another mixing as such. However, if you set up the INCLUDE function on the MIXING “B” whole mixing will be as right hand side of the drawing. So Mixing “B” included with MIXING “A”. Per this set up it reduces the complexity and simplifies the mixing.



■ For Helicopter

Channel name	Items which can be Included
Ch1: Throttle (THRO)	Throttle trim, Throttle Curve (THROCURVE), Throttle Mixing (MIX → THRO), Throttle hold (THROHOLD), Throttle Cut (THROCUT)
Ch2: Aileron (AILE)	Aileron trim, Dual Rate, (D/R&EXP)
Ch3: Elevator (ELEV)	Elevator Trim, Dual Rate (D/R&EXP)
Ch4: Rudder (RUDD)	Rudder Trim, Dual Rate, (D/R&EXP)
Ch5: Gear (GEAR)	
Ch6: Pitch (PIT.)	Pitch Curve (PIT.CURVE)
Ch7: AUX2	
Ch8: AUX3	
Ch9: AUX4	
Ch10: AUX5	
Ch11: AUX6	
Ch12: AUX7	
Ch13: AUX8	
Ch14: AUX9	
Extra: FMOD	The mixing can be coupled to the Flight Mode Switch.
TRNR	The mixing can be coupled to the Trainer switch.
NEDL	Channel which is allocated for Needle setting.

■ For Airplane

Channel name	Items which can be Included
Ch1: Throttle (THRO)	Throttle trim, Throttle curve (THRO CURVE), Throttle cut (THRO CUT)
Ch2: Aileron (AILE)	Aileron trim, Dual Rate (D/R&EXP), Flap system (FLAP SYSTEM)
Ch3: Elevator (ELEV)	Elevator Trim, Dual Rate (D/R&EXP), Flap system (FLAP SYSTEM)
Ch4: Rudder (RUDD)	Rudder Trim, Dual Rate (D/R&EXP)
Ch5: Gear (GEAR)	
Ch6: Flap (FLAP)	Flap Trim, Flap System (FLAPSYS)
Ch7: AUX2	
Ch8: AUX3	
Ch9: AUX4	
Ch10: AUX5	
Ch11: AUX6	
Ch12: AUX7	
Ch13: AUX8	
Ch14: AUX9	
Extra: LTRM	Mixing from Left side Trim (AUXTRIM).
LLVR	Mixing from Left side Lever (AUX3LEVER).
RTRM	Mixing from Right side Trim (FLAPTRIM).
RLVR	Mixing from Right side Lever (FLAPLEVER).
SNAP	Mixing from SnapRoll Switch (SNAPSW).

For Glider

Channel name	Items which can be Included
Ch1: Flaperon (FPRN)	Flaperon Mixing (FPRN MIX), Camber System(CAMB SYS), Brake system (BRAKE SYS), Elevator=>Flap MIX(ELEV->FLAP), Flap Rate (FLAP RATE)
Ch2: Aileron (AILE)	Aileron Trim, Dual Rate (D/R&EXP), Camber system (CAMB SYS)
Ch3: Elevator (ELEV)	Trim, Dual Rate (D/R&EXP), Flaperon Mixing (FPRNMIX), Brake System (BRAKESYS)
Ch4: Rudder (RUDD)	Trim, Dual Rate (D/R&EXP), AILE → RUDD (Aileron → Rudder Mixing)
Ch5: Gear (GEAR)	
Ch6: Flap (FLAP)	Trim, Flaperon Mixing (FPRN MIX), Brake System (BRAKE SYS), Elevator =>Flap Mixing (ELEV → FLAP MIX)
Ch7: AUX2	
Ch8: AUX3	
Ch9: AUX4	
Ch10: AUX5	
Ch11: AUX6	
Ch12: AUX7	
Ch13: AUX8	
Ch14: AUX9	
Extra: #SPO	Mixing from the Spoiler Stick.
FMOD	The mixing can be coupled to the Flight Mode Switch.
TRNR	The mixing can be coupled to the Trainer switch.
MOTO	Channel which is allocated for Motor control.

Slave channel's name, application items which can be "INCLUDED"

For Helicopter

Channel name	Items which can be Included
Ch1: Throttle (THRO)	
Ch2: Aileron (AILE)	
Ch3: Elevator (ELEV)	
Ch4: Rudder (RUDD)	
Ch5: Gear (GEAR)	
Ch6: Pitch (PIT.)	
Ch7: AUX2	
Ch8: AUX3	
Ch9: AUX4	
Ch10: AUX5	
Ch11: AUX6	
Ch12: AUX7	
Ch13: AUX8	
Ch14: AUX9	
ETC: CH2	When this Swash Type is set, it provides mixing to Channel 2.
CH3	When this Swash Type is set, it provides mixing to Channel 3.
CH6	When this Swash Type is set, it provides mixing to Channel 6.
CH8	When this Swash Type is set, it provides mixing to Channel 8.
NEDL	It is possible to set Mixing to the Needle channel.

For Airplane

Channel name	Items which can be Included
Ch1: Throttle (THRO)	
Ch2: Aileron (AILE)	
Ch3: Elevator (ELEV)	
Ch4: Rudder (RUDD)	
Ch5: Gear (GEAR)	
Ch6: Flap (FLAP)	
Ch7: AUX2	
Ch8: AUX3	
Ch9: AUX4	
Ch10: AUX5	
Ch11: AUX6	
Ch12: AUX7	
Ch13: AUX8	
Ch14: AUX9	
ETC: FPRN	If the Wing type is selected as "DUAL ELEV" or "4-AILE" or "6-AILE" it is possible to arrange mixing on Aileron as a flap.
AILV	If the Wing type is selected as "DUAL ELEV" or "4-ELEV", it is possible to arrange mixing on elevator as an Aileron movement. And it is also possible to include Aileron differential.
RDVT	When the Wing type is set to "DUAL RUDD" it is possible to mix to the elevator from Rudder.
FLAI	When the Wing type is set to "DUAL FLAP", it is possible to mix to the Aileron from Flap. And it is also possible to include Flap Differential (FLAP DIFF.) in the mix.

For Glider

Channel name	Items which can be Included
Ch1: Flaperon (FPRN)	
Ch2: Aileron (AILE)	
Ch3: Elevator (ELEV)	
Ch4: Rudder (RUDD)	
Ch5: Gear (GEAR)	
Ch6: Flap (FLAP)	
Ch7: AUX2	
Ch8: AUX3	
Ch9: AUX4	
Ch10: AUX5	
Ch11: AUX6	
Ch12: AUX7	
Ch13: AUX8	
Ch14: AUX9	
ETC: AILV	When the Wing type is set to "DUAL ELEV" (Dual Elevator) it is possible to mix to Aileron from Elevator. And it is also possible to include Aileron Differential (AILE DIFF.) in the mix.
RDVT	When the Wing type is set to "DUAL RUDD" it is possible to mix to Elevator from Rudder.
FLAI	When the Wing type is set to "DUAL FLAP" (Dual Flap) it is possible to mix to Aileron to the Flap And it is also possible to include Flap Differential (FLAP DIFF.) in the mix.
SPRD	When the Wing type is set to "DUAL SPOI" it is possible to mix to Rudder from Spoiler.
MOTO	It is possible to mix to the available Channel from the allocated channel for Motor control.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

TIMER [TIMER]

Function Explanation

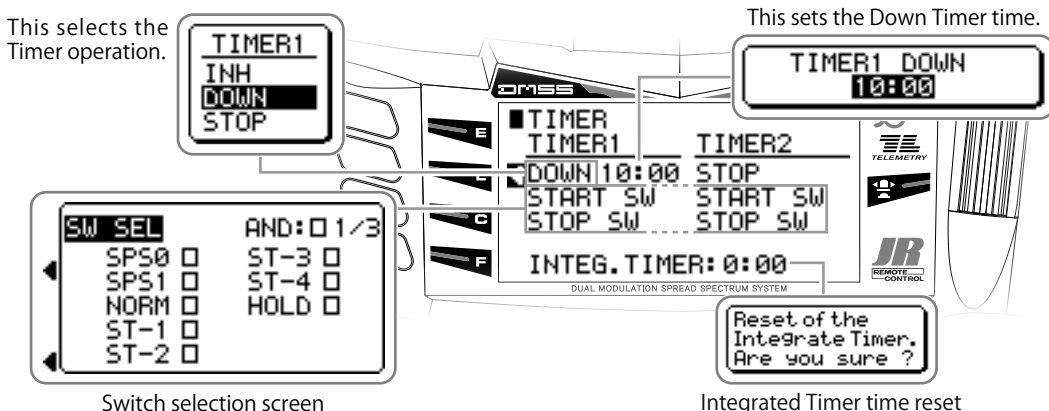
This transmitter incorporates two Independent Timer systems as well as an Integrated Timer. Each system has two types of timer . a count down timer and a stop watch timer. The timer can be operated in Flight Modes and through free switch selection.

Setting Method

- DOWN TIMER

Initially, the timer function is inhibited - "INH". Select (INH) and press the dial and select the "Down Timer". The default value for the DOWN timer is 10:00 - 10minutes and 00 seconds. The Down Timer can be set to a maximum of 59 minutes 59 seconds. As the timer counts down, an alert signal will sound every 10 seconds for times of 1 minute or less, and every second for times of 10 seconds or less. From zero, the timer will start counting up and "+" will be displayed.

※As an example, Set the Timer #1 as Down Timer, Set the Timer #2 as Stop watch



- Stop Watch Timer (UP TIMER)

Initially, the "STOP" watch up timer function is inhibited - "INH". To activate, select (INH) and press the dial to select the "STOP" timer. The default settings for the STOP timer is 00:00 - 0 minutes and 0 seconds. The STOP Timer can run to a maximum of 59 minutes 59 seconds and then returns to 0 minutes, 0 seconds. While the timer is running, a signal will sound every minute.

- Starting and Stopping the timer (START/STOP)

Function can be allocated to different switches to start or stop the timer. For example, the start switch could be allocated to the SPS switch on the throttle then the Off switch to the trainer switch. Alternatively, it is possible not to switch off the timer by not allocating the timer switch. the SPS switch could be used to turn the timer "ON" and "OFF" off the timer switches are described below.

If on selection is made for START SW or STOP SW then the Timer Function can be started and stopped by using the F(function) button when either TIMER function is highlight by rotating the dial.

"T" will appear next to the F(function) button.

- Integrated Timer (INTEGRATE TIMER) time reset

The Integrated Time is recorded individually for each model. When this time exceeds 100 hours, the time will return to zero. This can be used as a reference for maintenance of each aircraft. This time can also be reset to zero - set the cursor on the Integrated timer and press the dial to reset.

TIPS

- It is possible to move from the Information and Timer screen to each timer function directly.
- It is possible to reset the timer by pressing the CLR key after moving the cursor to the Timer display on the Information and Timer screen.

MIXING MONITOR [MIX MONITOR]

Function Explanation

This screen gives a listing and confirmation of each of the mixing conditions and basic settings incorporated in the transmitter.

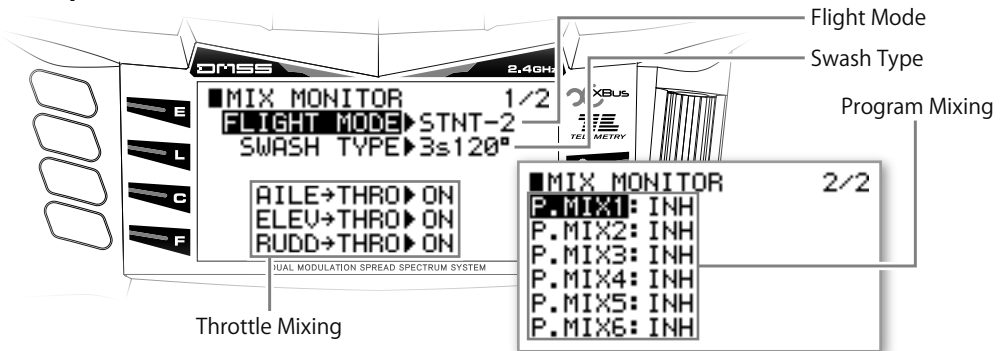
Because all the mixing that has been incorporated in each model will be displayed regardless of whether it is set to INH or ACT, it will also be possible to discover unintentional setting mistakes.

Further, each of the items displayed on the screen can be accessed directly, avoiding the trouble of searching for functions, allowing speedy access to settings.

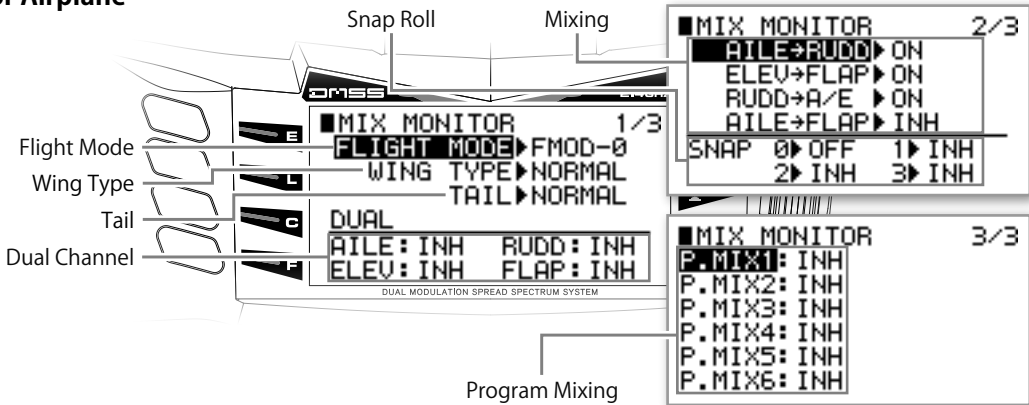
Setting Method

It is possible to check each Mixing condition on the monitor. Move the cursor using the dial and click to set each function directly.

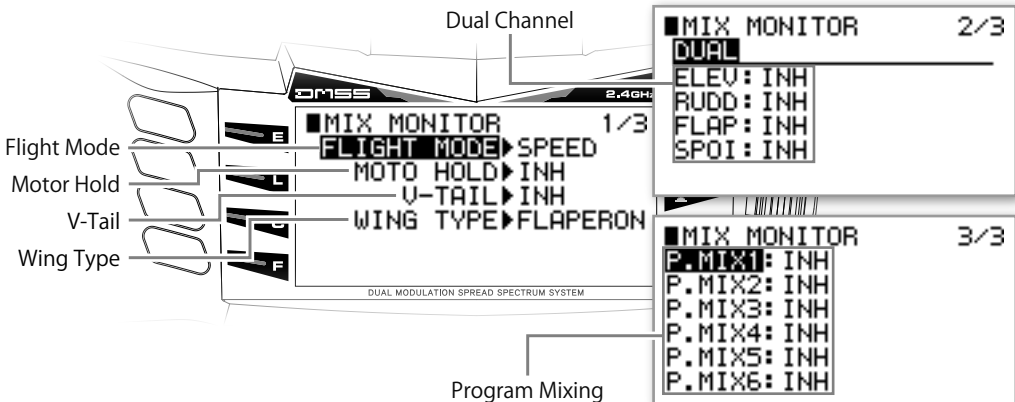
For Helicopter



For Airplane



For Glider



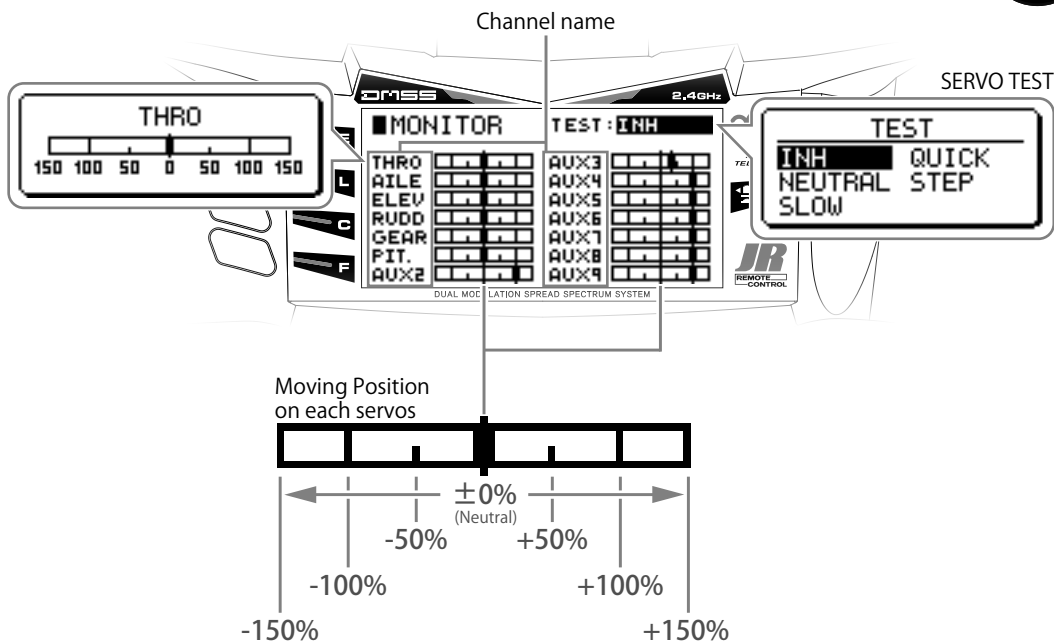
SERVO MONITOR [MONITOR]

Function Explanation

This function allows simulation of servo operation on the transmitter. Because this gives a 'final output' of all servo signals, provisional confirmation can be carried out before actually connecting the servos. Further, this is useful for discovering unintentional mixing and switch setting mistakes.

Setting Method

Servo test outputs are displayed on the screen. Operate each control and switch and carefully confirm the settings.



- **SERVO TEST**
A Servo Test can be carried out within this function mode. Select the required servo test from below four options. Also note that if a Limit Adjust has been set (on the function List), servos will not move further than is allowed by the limit setting. In this way you can avoid damaging servos or linkages on the aircraft.

INH: Invalid.

NEUTRAL: Set all the servos to their Neutral positions.

SLOW: All servos simultaneously move at Low speed linearly using $\pm 100\%$ travel.

QUICK: All servos simultaneously move at High speed linearly using $\pm 100\%$ travel.

STEP: Each channel's servo sequentially moves on each side in turn using 100% travel.

MODEL SELECT (MODEL SELECT)

Function Explanation

Here it is possible to start setting up a new model and switch between existing models. Up to 30 unique models can be stored in this transmitter.

Setting Method

For safety reasons, a screen initially appears confirming that you wish to stop radio wave transmission. Select "YES" to continue to this function screen.

Next, the current Model No. and Model Name will be displayed. Select this item and press the dial.

Now rotate the dial to find the model you wish to switch to and press the dial to select it.

When creating a new model, selecting a name containing "----" will start initial parameter navigation allowing a new model to be created.



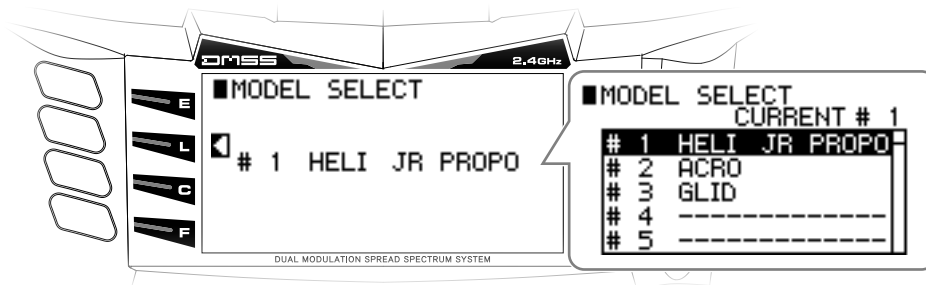
Helicopter



Airplane



Glider



MODEL COPY & ERASE [MODEL COPY/ERASE]

Function Explanation

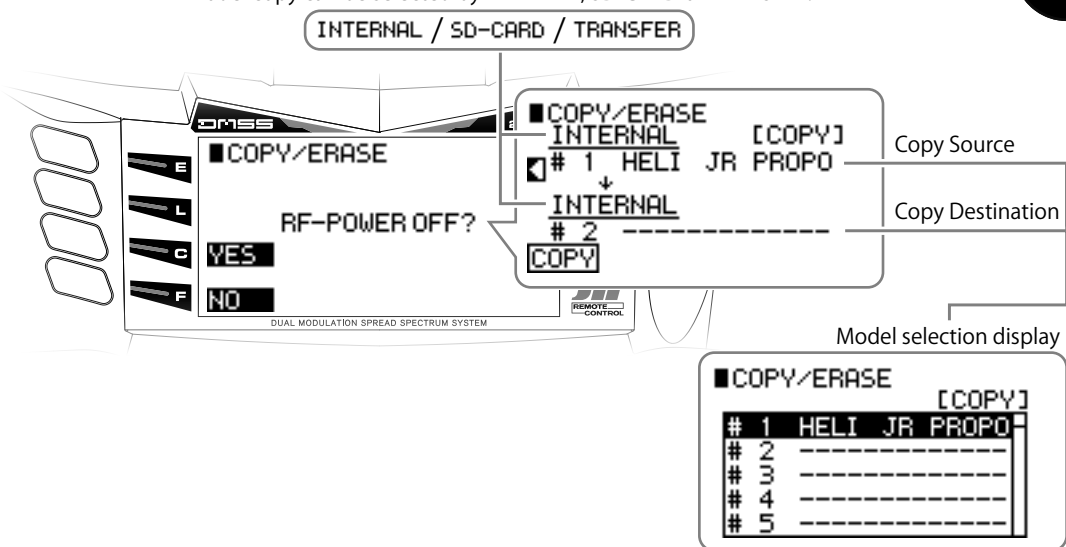
In this screen, copying and erasing of model data is carried out. This can be carried out on both the transmitter memory and on an SD Card. In addition, it is possible to copy model data between other matching JR transmitters that have been connected using a trainer cable.

Setting Method

For safety reasons, a screen initially appears confirming that you wish to stop radio wave transmission. Select "YES" to continue to this function screen. No RF output is transmitted.

- MODEL COPY

Model copy can be selected by INTERNAL, SD-CARD or TRANSFER.



- Copy Source

The Copy Source can be selected as the Internal Memory "INTERNAL", SD CARD as "SD-CARD", and between transmitter and transmitter as "TRANSFER".

If "Transfer" is selected, the Copy source will be the current model number. If you wish to select from "INTERNAL", or "SD-CARD" be sure to select the particular Model before proceeding.

- Copy Destination

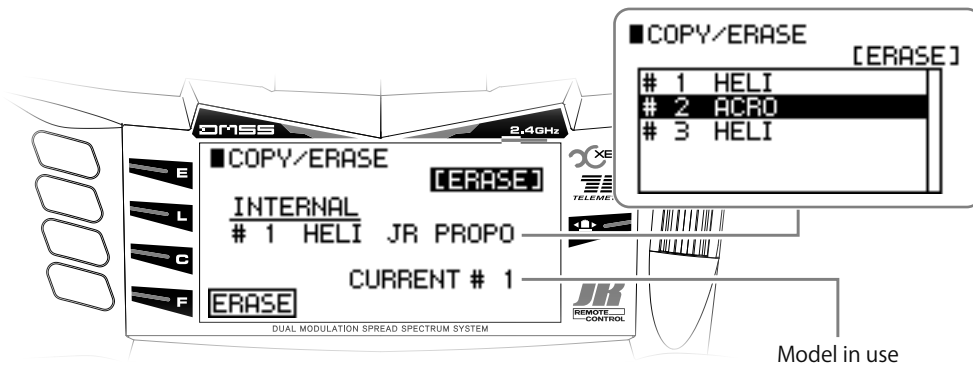
The Copy Destination can be selected from "INTERNAL", "SD CARD", or "TRANSFER".

If wish to select the Destination as "INTERNAL" or "TRANSFER", Chose the Stored Model number first.

※If data exists on the Copy destination, it cannot be written over. Be sure to erase the data first before copying.

When the SD CARD is chosen, be sure to Input the File name first. If the File name on SD card is exactly the same as a previous entry, this cannot be copied over. Modify the file name and try again.

- Model Erase



Model data stored on the "INTERNAL" memory or SD CARD can be erased. Be sure to double check the model being erased before continuing.

- ※ If the currently selected model is erased, the new model creation wizard will automatically start. If wish to use the current model number, be sure to copy it to another model number first and erase the particular model by Model Select.

TIPS

- The "TRANSFER" of data between transmitters can be only achieve when the Trainer cable (Sold Separately) has been plugged in to the XG11 and the transmitter power switch is turned off.
- When a model transferred from another transmitter is used, it will be necessary to carry out binding with the receiver again.

Caution Note

- While this screen is displayed, and during copy procedure, NEVER remove the SD Card under any circumstances. There will be a danger of destroying Model Data which is on the card.

Model Type Select [TYPE SELECT]

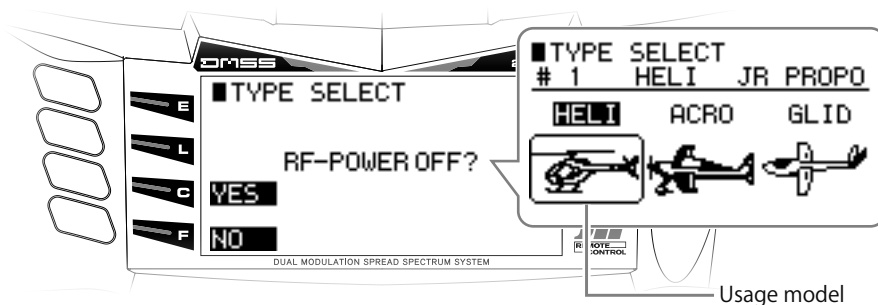


Function Explanation

This function allows selection of model type.
 The type can be switched between Helicopter ⇄ Airplane ⇄ Glider.
 Additionally, this screen will be automatically displayed when creating a new model.

Setting Method

When entering this function screen from the System List, the model type of the currently selected model can be changed. Select the type that you wish to change to by rotating the dial, then press the dial to confirm. After doing so, you will be asked whether the current model data is to be reset, so select "YES" to implement the reset.
 For safety reasons, a screen initially appears confirming that you wish to stop radio wave transmission. Select "YES" to continue to this function screen. Now no RF output will be transmitted.



TIPS

- The connections with the receiver should be made as shown in the figure below.

Receiver connection channel list

RECEIVER	HELICOPTER	AIRPLANE	GLIDER
1) THRO	THRO	THRO	LAILE
2) AILE	AILE	AILE	RAILE
3) ELEV	ELEV	ELEV	ELEV
4) RUDD	RUDD	RUDD	RUDD
5) GEAR	GYRO	GEAR	GEAR
6) AUX1	PIT.	FLAP	FLAP
7) AUX2	GOV	AUX2	AUX2
8) AUX3	NEDL	AUX3	AUX3
9) AUX4	AUX4	AUX4	AUX4
10) AUX5	AUX5	AUX5	AUX5
11) AUX6	AUX6	AUX6	AUX6
12) AUX7	AUX7	AUX7	AUX7
13) AUX8	AUX8	AUX8	AUX8
14) AUX9	AUX9	AUX9	AUX9

Caution Note

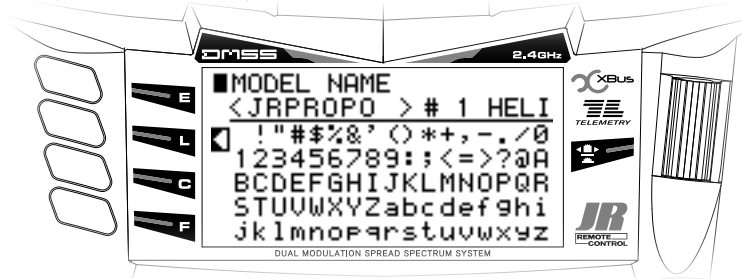
Because the previous data will be erased when the model type is changed, any important model data should be copied and backed-up beforehand. Also note that when the Model type is changed, the new model setup wizard will automatically start, so choose the Model Type and Wing Types accordingly.

Model Name [MODEL NAME]

Function Explanation

In this screen, the inputting and modification of each model name can be carried out. Select the name from the list of characters and numbers. The Name can contain a maximum of 8 characters.

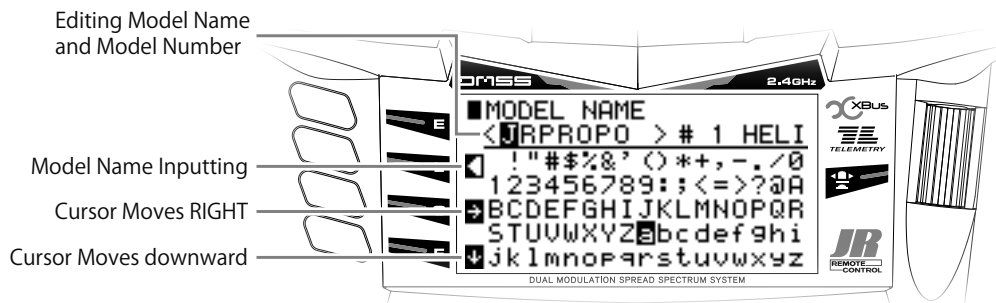
Display showing the Heli type as an Example.



Setting Method

The name of the model that is currently being used can be registered and changed. First, move the cursor to the desired position, and press the dial. By doing this, the cursor will move to the list of characters, allowing you to select your desired characters and input it by pressing the dial.

The LIST key enables you to return from character selection to the Name Input line. Because there is no Delete key, to correct an input you should return to the Name Input line and overwrite the name.



TIPS

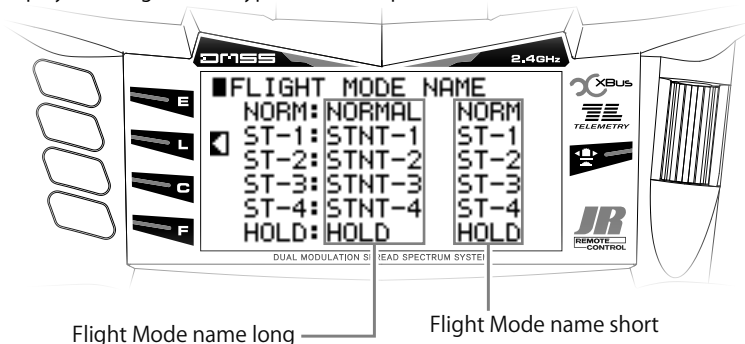
- Since the Model Name is displayed on the Information display and during Model Selection, it is useful to use the brand name of the aircraft.

Flight Mode Name [FLIGHT MODE NAME]

Function Explanation

In this screen, the name given to the Flight Modes can be changed. The Flight Mode name display is shown with two names, one long name up to six (6) characters and one short name up to four (4) characters, which are used in each of the screens, and each can be freely changed.

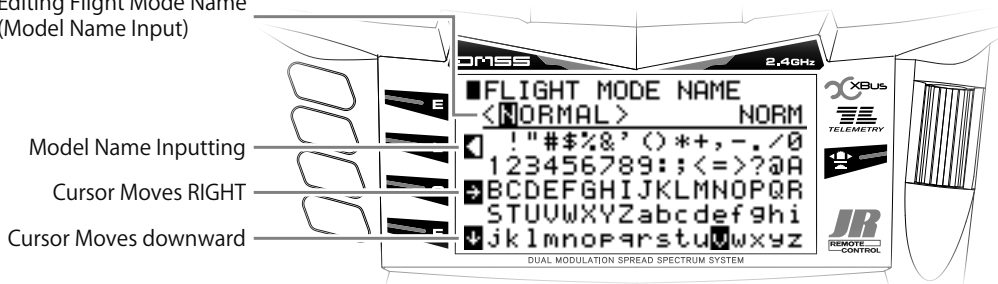
Display showing the Heli type as an Example.



Setting Method

In each Flight Mode, there are displays of a long 6-character name and a short 4-character name. Rotate the dial to select the name that you wish to change, then press the dial and enter the name in the same way as you would for a model name.

Editing Flight Mode Name
(Model Name Input)



TIPS

- The Flight Mode name is displayed on the Information display as well as each function showing flight mode condition.



Trim System [TRIM SYSTEM]

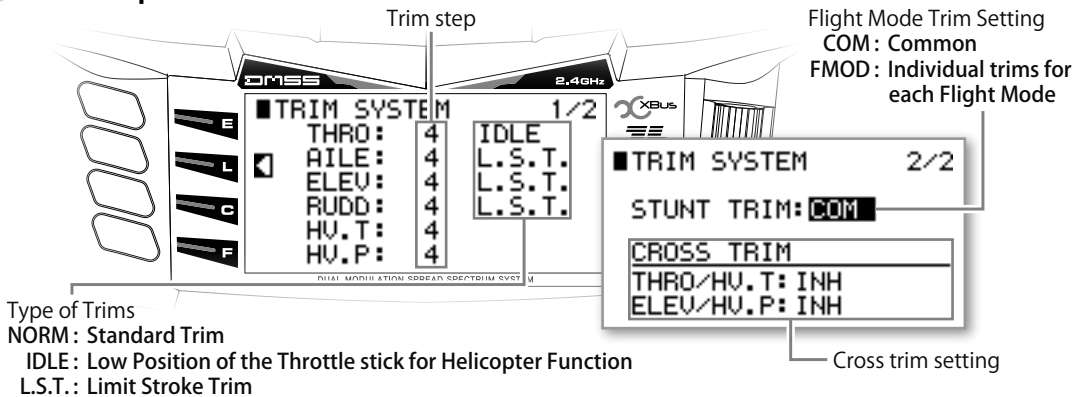
Function Explanation

In this screen, the various settings relating to the Trims can be changed. The resolution of each Trim, the Trim type, whether separate or common trims should be used for each flight mode can be set. Using this function, customers can easily change the trim settings.

Setting Method

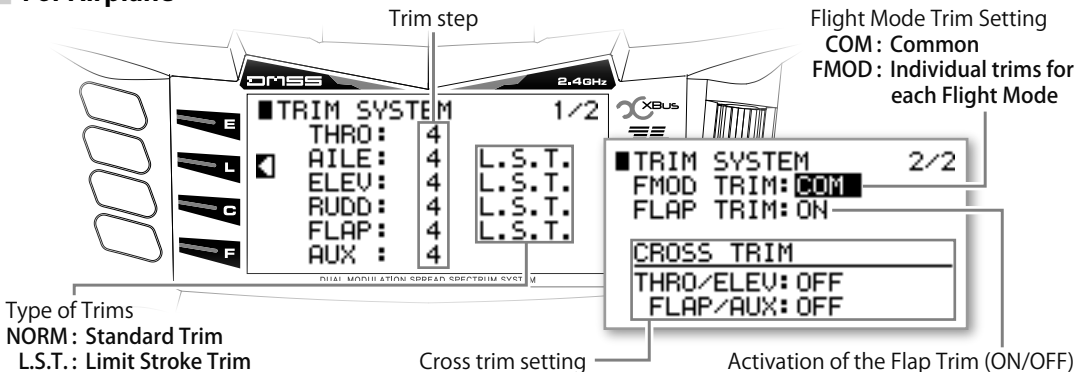
- Trim Step**
 It is possible to set the trim travel amount per one (1) click. The default is Four (4) steps per click. It is possible to set the step to be between one (1) step and ten (10) steps.
- Trim Rate**
 If the throttle trim is Analog, a throttle trim rate is provided. This Trim Rate shall limit the travel amount as a percentage of normal trim travel.
- Trim Type**
Normal Trim (NORM) is the default trim type. The entire servo operation range will be changed when the trim is moved.
Limit Stroke Trim (L.S.T.): the trim amount set at each stick center (neutral) position will be the maximum, while the effect of the trim will disappear at the stick end positions. End point travel adjustment will not be changed by the trim settings. It is possible to avoid damage to servos, linkages and control surfaces by using L.S.T.
Idle Trim (IDLE) is a Helicopter function only: This trim only functions at the low position of the throttle stick.

For Helicopter



- Stunt Trim (STUNT TRIM)**
 It is possible to select the Trim adjustment to cover all flight modes (eg Normal, ST-1, ST-2, ST-3, ST-4, Hold), or to set each flight mode to require separate trim adjustment.
 COM: Common.
 FMOD: Individual trims for each flight Mode.

For Airplane



- Flight mode Trim adjustment (FMOD TRIM)**
 It is possible to select the Trim adjustment to cover all flight modes (eg ST-1, ST-2, ST-3, ST-4), or to set each flight mode to require separate trim adjustment.
 COM: Common.

FMOD : Individual trims for each flight Mode.

- Flap Trim ON/OFF (FLAP TRIM)

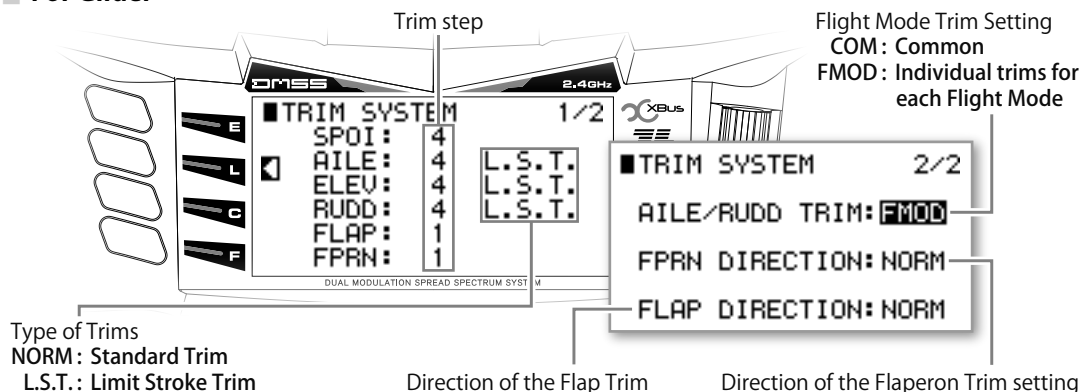
It is possible to select the flap trim as active or inactive.

- Cross Trim setting

Two trims can be switched around (Cross Trim) in order to set the trim to the opposite side of the transmitter so as trim can be adjusted without removing fingers from the control stick.

- ① Throttle and Elevator (THRO/ELEV)
- ② Possible to swap Flap trim & AUX Trim (FLAP/AUX)
 OFF : Normal.
 ON : Switch Around Trim.

For Glider



- Flight Mode Trim for Aileron and Rudder Trim (AILE/RUDD TRIM)

It is possible to select independently Aileron and Rudder Trim for each flight mode, or use a common trim setting across all flight modes.

COM : Common.

FMOD : Individual trims for each flight mode.

- Direction of Flaperon Trim (FPRN DIRECTION)

It is possible to change the Input direction of the Flaperon Trim as desired.

NORM: Standard trim direction.

REV. : Reversed trim direction.

- Direction of Flap trim Setting (FLAP DIRECTION)

It is possible to change the Input direction of the Flap trim as desired.

NORM: Standard Flap trim direction.

REV : Reversed Flap trim direction.

TIPS

- By setting the Trim Step to "0" it is possible to inhibit the operation of a trim lever.
- For Helicopter: It is very useful Tips as Normal for ESC setting as GAS mode. (i.e. Not using Governor Mode) to be able to Move the whole Throttle Curve to change the Rotor r.p.m. .
 It is very useful when not using a governor to Move the whole Throttle Curve to change the Rotor rpm.
- Throttle Trim for the Airplane has been fixed on Idling Trim.



Stick Position Switch [STICK POSITION SW]

Function Explanation

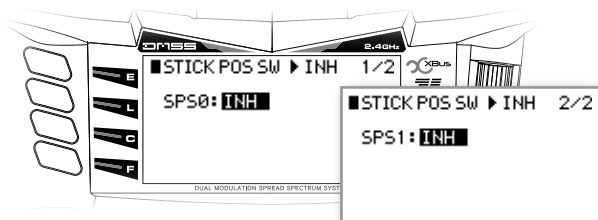
This is a convenient function that allows switching (ON/OFF) of virtual switches using stick operation. Virtual switches can be programmed to any stick position, and then used to switch various functions On and Off.

This function can be used as a virtual switch for Programmable Mixers, turning the mix on or off. Additionally, a stick position switch can be used start or stop a timer.

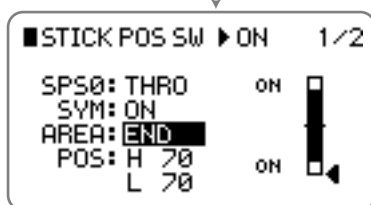
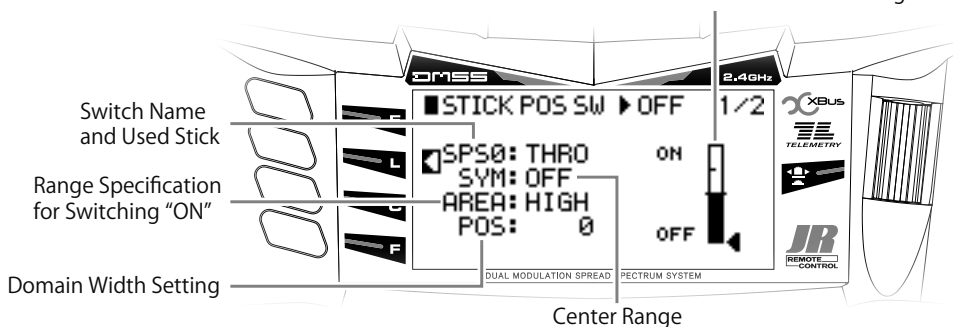
Setting Method

Two virtual switch systems are available. All of the switches are initially set to "INH" Once activated, the ON/OFF boundary line can be set to any desired position.

It is also possible to select the Virtual Switch to turn ON/OFF or OFF/ON. Further, it is possible to allocate the stick so each side of center turns ON/OFF or OFF/ON. It is also possible to set a position in between to turn the virtual switch ON/OFF or OFF /ON, with a variable dead Zone in the middle.



White is the "ON" range, and black is the "OFF" range. Depending on the switch that is used, the Monitor screen direction will change.



If **SYM** is set to **ON**, the range will appear in the neighborhood of the neutral position.

TIPS

- In various functions, by choosing "SW SEL", and selecting SPS0 ~ SPS 5, it is possible to Turn functions ON/OFF using stick control.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

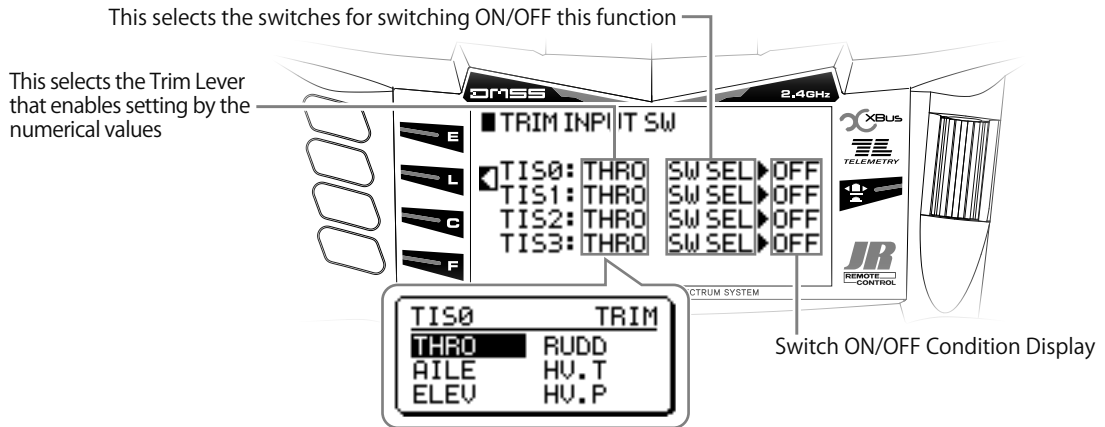
Trim input Switch [TRIM INPUT SWITCH]

Function Explanation

This function allows adjustment of Mixing values or the Sensitivity value for Gyro settings, using a chosen trim lever. It is a very useful function which enables fine tuning during flight.

Setting Method

There are four types of Trim Input switch. The Initial setting of the Trim Lever is "THRO TRIM" (Note: For Gliders it is "SPOI TRIM"). There is no option for using a Trim Input Switch for "SW SEL". For each Trim switch, select which Trim Lever will be used to operate it. Then select which switches are to be used to turn the Trim Input function On and Off.



TIPS

Trim Input Switches have different uses depend on each model type. Also note the functionality of the four types has to be selected before activating the Trim Input.

- **For Helicopter**
 - Gyro sensitivity (GYRO SENS) Change Gyro Sensitivity.
 - Governor (GOVERNOR) Change Rotor r.p.m..
- **For Airplane**
 - Flap System (FLAP SYSTEM) Change the Flap position.
 - Differential (DIFFERENTIAL) Change the amount of Differential.
 - Gyro Sensitivity (GYRO SENS) Change the gyro Sensitivity.
- **For Glider**
 - Brake System (BRAKE SYSTEM) At Point "0" (Maximum amount of Braking) Change the Mixing amount.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.
- When a Trim input switch is activated the Normal Function of the Trim is inhibited.

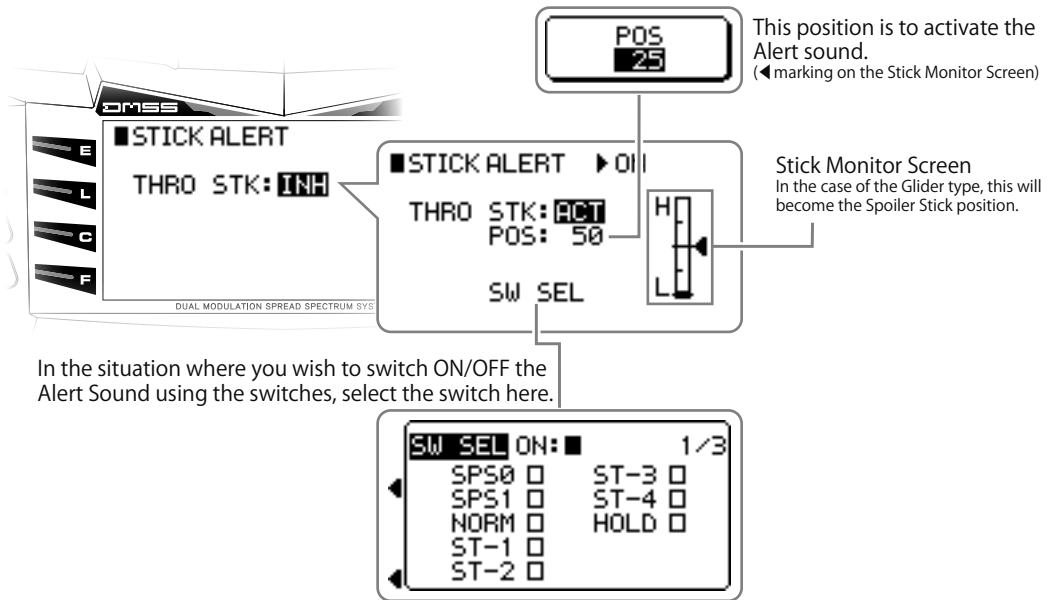
Stick Alert [STICK ALERT]

Function Explanation

This function will sound an alert when the Throttle Stick reaches a certain position. It is convenient to confirm the hover position or zero pitch with an alert.

Setting Method

The initial setting is "INH". First set this to "ACT". Adjust the stick position to where the alert should activate. If necessary, use "SW SEL" to couple with a flight mode or other switches to use this function.



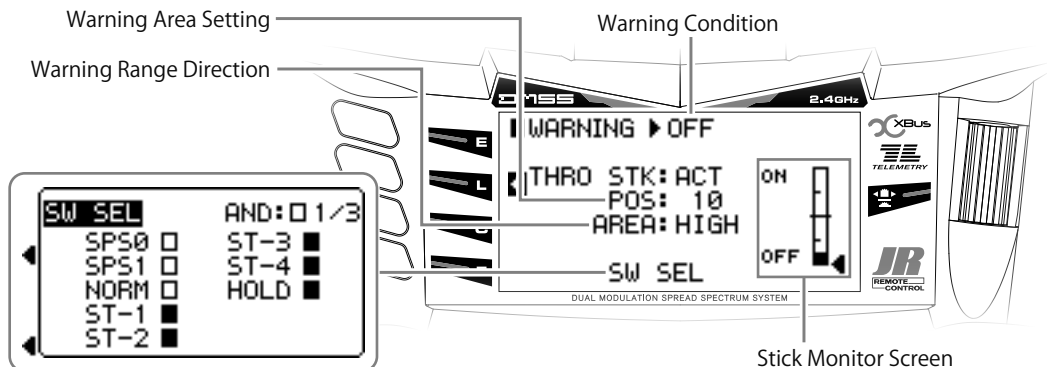
Warning [WARNING]

Function Explanation

If the Throttle Stick or Flight Mode switches are set to potentially dangerous positions when the transmitter is switched on, an alert is triggered. A warning will be displayed on the LCD screen, and radio waves will not be emitted until the throttle stick and flight mode switches have been returned to safe positions.

Setting Method

First change "INH" to "ACT", to activate this function. Then set the position where the warning will be given using the Throttle Stick, and choose the switches and positions where the warning is to be set. Particularly for electrically powered gliders, do not forget to set the switch that operates the motor.



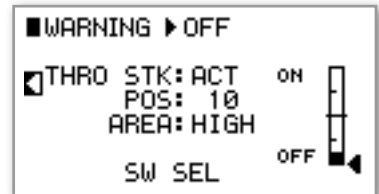
To the Switch that is to have the Warning applied. The Name displays on the switch selection screen will differ slightly depending on the model type.

Stick Monitor Screen
In the case of the Glider type, this will become the Spoiler Stick position.

For Helicopter

Initially, the Warning alert will not shut off unless the following conditions are met:

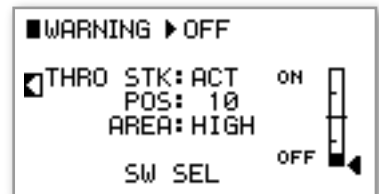
- Throttle stick set to the slowest position.
- Flight Mode Switch set to Normal Mode "NORM".



For Airplane

Initially, the Warning alert will not shut off unless the following conditions are met:

- Throttle stick set to the slowest position.



For Glider

There is no Warning alert default for Glider Mode. If necessary, set a "Warning" which suits your application. For example, with an electric powered glider, you may set a warning to ensure the motor switch is in the Off position when the transmitter is turned on.



Caution Note

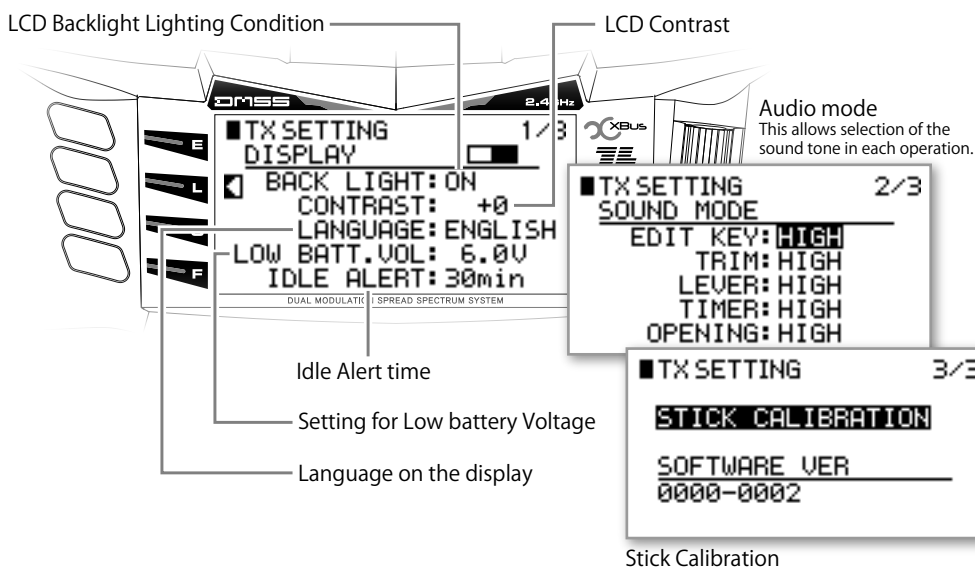
- For safety reasons, be certain to activate this function and check the warning works as expected.

Transmitter Setting [TX SETTING]

Function Explanation

This function allows basic adjustment of transmitter settings such as LCD display mode, sound (audio) mode, etc.

Setting Method



- LCD Back light (BACK LIGHT)
The LCD Back light can be set to function in one of three modes.
 - 1) AUTO (Lit for 30 seconds & then automatically shuts off)
 - 2) ON (Always on lit)
 - 3) OFF (Always off)
- LCD contrast (CONTRAST)
The LCD Contrast can be changed between numerical values of ± 20 .
- Idle Alert (ILDE ALERT)
This function ensures the operator does not forget to turn off the transmitter. The idle (inactivity) time can be set to four different settings.
INH / 10min / 30min / 60min
- Low battery warning (LOW BATT.VOL)
This sets the voltage at which the Low battery alert triggers. Initially, it is set to 6.0V.
- Audio Mode (SOUND MODE)
It is possible to change the audio pitch (or mute) for the following functions.
 - ▶ Edit
 - ▶ Trim step
 - ▶ Side Lever Neutral center
 - ▶ Timer sound
 - ▶ Opening sound (Sound when the transmitter is first turned on)
- Stick Calibration (STICK CALIBRATION)
This function calibrates the neutral position of the stick and stick travel which is especially useful after changing Stick modes (Mode 1 to Mode 2 or Vice Versa). The calibration procedure is as follows.
 - ① Set both right and left sticks to their center positions, and press the function key to calibrate neutral.
 - ② Next move both right and left sticks up and down and right to left and press the Function key to calibrate stick travels.
 - ③ Be sure to check control movement and neutral positions on the servo monitor screen.
- Software version (SOFTWARE VER)
This indicates the current version of the transmitter's software. For example: 0001-0000(Ver1.0)

TIPS

- Alert Warnings cannot be muted.

Trainer [TRAINER] aka: Buddy Box in the USA



Function Explanation

This function allows two (2) transmitters to be connected via a Trainer cable (available separately) to allow dual control flight instruction. A skilled pilot can teach a beginner how to fly an aircraft using this trainer system. The XG14 can function as Master (Trainer) or Slave (Trainee). Control can be changed between Master and Slave using the Master Transmitter's Trainer switches (Trainer momentary switch, or Trim Lever).

Setting Method

- As a Master transmitter
When using the XG14 as a "MASTER"
- ① The Main Power must be turned on, the transmitter is transmitting Radio Waves, and is bound to the aircraft.
- ② The Trainer cable is plugged in.
The Trim Lever or Trainer Switch (Momentary Toggle switch) are selected using "SW SEL" - by turning these ON/OFF it is possible to switch control from the Master transmitter to the Slave. There are two modes available for the Master transmitter.
- Master Side has following two modes.

- "NORMAL MODE"

The Master transmitter always has priority control. Control data coming from Slave transmitter is only sent to the aircraft by switching control from Master to Slave. The Slave transmitter has to be set to "PPM" mode. The Master transmitter has full control over the model, however, the Slave transmitter does not need to be exactly the same radio, or a high end transmitter. The Slave transmitter should be able to output a "PPM" signal, and have a trainer Jack as the minimum transmitter function requirements.

- "PROGRAM TRAINER"

The Master transmitter can be programmed to choose the control channels independently for use by the Slave transmitter: Channel-1 (THRO /SPOI), Channel- 2 (AILE), Channel-3 ELEV) Channel-4 (RUDD) Select one or more of them to be controlled by the Slave transmitter. This allows the beginner pilot to learn a single control independently. This makes it easier to learn, without the worry of controlling all functions at once. The data coming from Slave to Master is combined with data from the Master transmitter's Settings (Trim, Dual rates, Mixing etc..) before being transmitted to the model. Therefore, The Master transmitter has full control. However, the Slave transmitter does not need to be a full control radio. Precise adjustments and settings must be done on the Master transmitter. The Slave transmitter must be selected as "SLAVE" This Trainer program is available on most recent JR Computer transmitters.

- As a Slave transmitter
When using the transmitter as a "SLAVE"
- ① The Main Power switch must be turned off (No Radio Waves are transmitted).
- ② The Trainer cable must be plugged in.
There are two modes available for the Slave transmitter.

- When the Master transmitter is set to Normal mode, the Slave transmitter should also be set to "NORMAL" mode. There are no specific setting requirements, however, if the radio has a Trainer program, do not set it as "SLAVE".

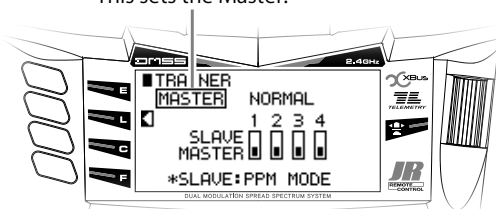
- SLAVE MODE:

Use this mode when the Master transmitter is set to "Program Trainer". When set as "SLAVE", only the Gimbals stick functions pass control outputs to the Master transmitter. Therefore, settings such as Dual rates and Mixing are ignored completely.

Caution Note

- Be sure to check for correct function and control prior to commencing flight training using two transmitters. Pay particular attention to control direction, Dual rates, mixing, etc.

This sets the Master.



This sets the Master.



The checked Stick Channels will be operated using

Screen during the Normal condition



Screen when there are Connection Problems



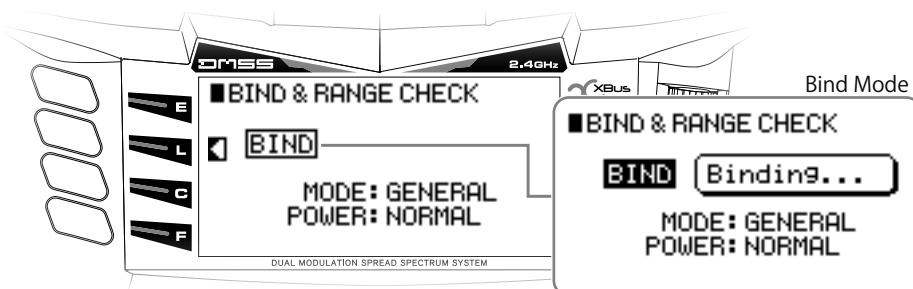
The cable is not connected or the power is switched on.

Bind and Range Check [BIND&RANGE]

Function Explanation

This function allows binding (pairing) with the receiver. In addition, transmitter power output can be reduced for carrying out a range check.

Setting Method



- **Binding (BIND)**
Set the receiver to the Bind Standby condition. Then rotate the dial to select "BIND" (inverse display) and press the dial. If the display shows "SUCCESS", binding has been successfully completed. If the display shows "TIMEOUT PLEASE TRY AGAIN", the bind process failed, and you must try again.
- **POWER (RF POWER) Range Check**
If POWER is changed from "NORMAL" to "LOW", the transmitter RF power is reduced and the LED will flash, allowing a range check to be carried out. Place the Aircraft 40 meters (approx 131 feet) away from the transmitter, and ensure all the controls function normally.
- **Regional Settings Mode (DMSS 2.4GHz Band width for France)**
When using the transmitter in France and its overseas territories, this should be set to "FRANCE". In all other regions this should be set to "GENERAL". In France mode, the 2.4GHz bandwidth that is used will be legally restricted compared to the bandwidth in other regions. Initially it is set to "GENERAL".

TIPS

- If there is a difficulty in binding a receiver, please confirm the following:
 - ⦿ Are the transmitter and receiver batteries fully charged? Please fully charge the batteries.
 - ⦿ Are the transmitter and receiver too close to each other? If they are set too close each other, RF swamping may interrupt the binding process. Please try binding again with the transmitter and receiver further separated.
 - ⦿ If the transmitter and receiver are on a metal table or desk, binding may be difficult. Please try binding on a different surface.
- Each receiver recognizes the transmitter's model ID. If the Model ID does not match the with particular model, it may not be able to complete binding. This is to avoid matching the wrong model's ID to the transmitter. Refer to the Page 76 "Transmitter Setting [TX SETTING]"
- Only matching DMSS receivers may be bound to the transmitter.

Caution Note

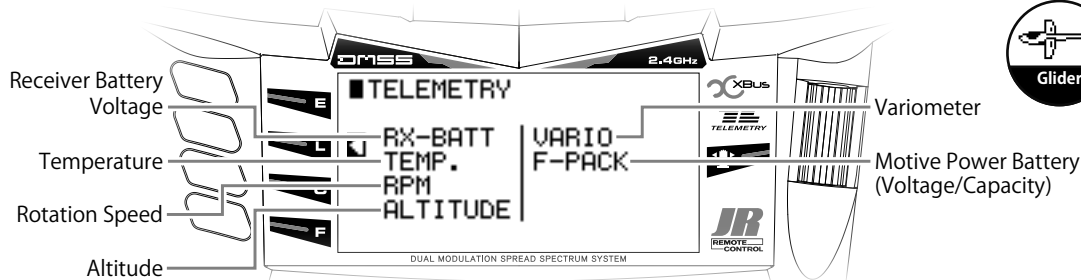
- Be sure to set the "FAIL SAFE" (under System List) after the binding procedure is complete. It is essential to use the Fail safe to minimize the risks of RF signal loss. Be conscious about safety all the time. Check the actual Fail safe settings by turning off the transmitter, and monitoring the response of the servos.
- When the model or type is changed in the transmitter, it will be necessary to re-bind the receiver.
- NEVER fly the aircraft in Range Check mode.

Telemetry System [TELEMETRY]

Function Explanation

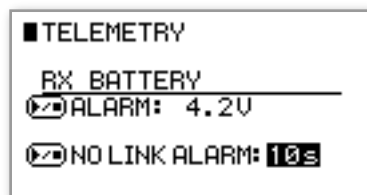
This allows confirmation of the telemetry sensors present in a particular aircraft, gathering information such as Receiver Voltage, Altitude, Temperature or Propeller or rotor blade r.p.m., etc. In addition to the data on the display, alarms are used, so as aircraft conditions can be monitored without taking your eyes off the aircraft.

Setting Method



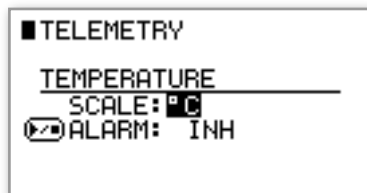
Receiver battery (RX-BATT) / No Link Alarm (NO LINK ALARM)

- Receiver battery alarm
This function alerts to a drop in receiver battery voltage. Initially it is inhibited. To activate, set the alarm Voltage between 3.0V – 9.0V in 0.1V increments.
- No Link Alarm
This will warn when the transmitter is no longer receiving data from the model. Initially it is set as inhibited. Set the delay after which the alarm should sound to either 10S (10 seconds), 15S (15 seconds), 20S (20 seconds), 30s (30 seconds).



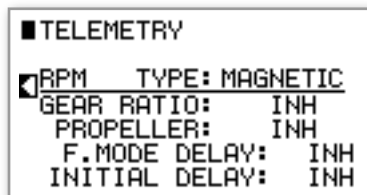
Temperature (TEMPERATURE)

- Unit (SCALE)
This selects the units for temperature display - Celcius (° C) or Fahrenheit (° F). Select the units as desired.
- Alarm (ALARM)
This sets the temperature at which the alarm will sound – between 30 and 500° C. Initially this alarm is inhibited. Set the temperature to the desired alarm point.



Revolutions Per Minute (RPM)

- Sensor type
Select the Rotation Sensor type depending on usage.
 - Magnetic Sensor (MAGNETIC)
By using the Magnet on Rotation object to sense the rotation.
 - Optical Sensor (OPTICAL)
By using the optical sensor which detect the obstruction of the light per propeller blade.
 - Motor Pulse Sensor (MOTOR)
By detecting the Pulse signal on the brushless motor to sense the rotation.
- Gear Ratio (GEAR RATIO)
It is possible to monitor the Helicopter's actual rotor blade r.p.m. by entering the gear ratio. Check the gear ratio for each Helicopter by checking your manual. Initially it is set as inhibited. Set the necessary numerical value. Gear Ratio can be set between 1.00 ~ 20.00 in 0.01 increments.
- Number of Blade (PROPELLER)
It is possible to monitor an Airplane's actual Propeller r.p.m by installtion of an optical sensor. It is necessary to input the number of blades for the propeller in order to have actual Propeller r.p.m displayed. Initially, it is inhibited. The number of Propeller blades can be set between 1-20.
- Delay (DELAY)
It is possible to display and store the maximum r.p.m. recorded in each flight mode. However, when the flight mode is changed, the sensor may immediately store a maximum value, which would be invalid. To avoid storing incorrect r.p.m. data, this function allows rpm to stabilise before storing any data. Initially it is set to inhibited. Set the desired numerical amount which would suit your model. The delay can be set from 0.5s (0.5 seconds) ~ 10.0s (10 seconds) in 0.5 seconds increments.



- Initial Delay (INITIAL DELAY)

In order to detect the Signal Pulse from the Brushless motor, it is essential to use ESC, however, certain ESC on the R/C market offers the function to alert initial start with sound of beep. This can be recognised as a highest RPM signal on this sensor, So False RPM may appear on the data screen. In order to avoid this false signal reading, It is capable to set the transmitter to read the signal with some delay between 5seconds to 30seconds (with 5seconds interval. Initially it is set as INH. Set the required timing by seconds to activate this function.

Altimeter (ALTITUDE)

- UNIT (SCALE)

This selects the units – Meter (m) or Feet (ft). Select the units as desired.

- Sound: Audio (SOUND1,2,3)

It is possible to select from three (3) types of audio for different altitude indications. Initially it is set to inhibit. If desired, set the alert sound depending on the situation. It is possible to set altitude between 1 ~ 2000m in 1.0 meter increments.

Types of Alert:

↑ : When the altitude is greater than the set value.

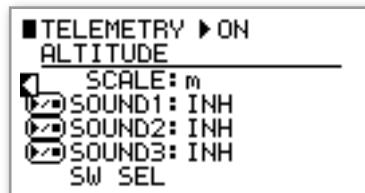
↓ : When the altitude is less than the set value.

~ : When flying within the set altitude range.

※ When the alert is set in an altitude range, it can be set between 0.3m ~ 9.9m in 0.3m increments. If the three (3) conditions overlap, Priority is set as "SOUND3 > SOUND2 > SOUND1".

- Switch Select (SW SEL)

It is possible to set an Alert to be active by switches or stick position, or a combination of those devices by using "SW SEL". Initially it is always turned on.



Climb Indicator (VARIOMETER)

- UNIT (SCALE)

This selects the units(m/s, ft/s). Select the units as desired.

- Audio for Ascent (UP SOUND1,2,3,4)

The Climb Rate can be set in 4 different ranges, with an alert for each range. Each one of the setting can have an alert. Initially it is set to "INH". The Climb Rate alert can be set between 0.1m/s ~ 3.0m/s, in 0.1m/s increments.

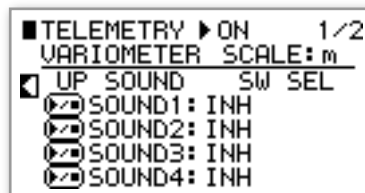
※ If the four (4) conditions overlap, Priority is set as "SOUND4 > SOUND3 > SOUND2 > SOUND1".

- Audio for Descent (DOWN SOUND)

The Descent Rate can be set in 4 different ranges, with an alert for each range. Each one of the setting can have an alert. Initially it is set to "INH". The Descent Rate alert can be set between 0.1m/s ~ 3.0m/s, in 0.1m/s increments.

- Switch Select (SW SEL)

It is possible to set the Alert to be active by switches or stick position, or a combination of those devices by using "SW SEL". Initially it is always turned on.



For Motive Power Battery (FLIGHT PACK)

- Motive Power BatteryAlarm (VOLT-ALARM)

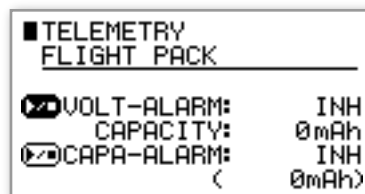
It is possible to set an alert for low Motive Power Battery voltage. Initially it is set as Inhibited. Set the alert voltage as desired. The Voltage can be set between 0.1V ~ 655.3V in 0.1V increments.

- Nominal Capacity Value (CAPACITY)

It is possible to set a Nominal Capacity Value to match your Motive Power battery capacity. The remaining battery capacity value is displayed by deducting the consumed capacity value. It can be set between 0mAh ~ 30,000mAh, in 10mAh increments.

- Battery Capacity Alarm (CAPA-ALARM)

It is possible to set a capacity remaining alert based on the Nominal Capacity value of your battery. Initially it is set as Inhibited. To activate, set a percentage between 0% to 100%. The alarm will sound when this calculated percent capacity remaining reaches this figure.



Air speed(A-SPEED)

Units of measurement (UNITS)

Select the units to display.

km/h: To show the speed in km per hour. **mph**: To show the speed in miles per hour.

knot: To show the speed in knots.

High speed alarm (UP ALERM) : Intermittent tone.

Set the over speed alarm.

The default value is disabled (INH). It is necessary to set a speed to enable the high speed alarm.

The alarm range is from 1 km/h to 999 km/h in 1 km/h steps.

Low speed alarm (DN ALERM) : Constant tone.

The default value is disabled (INH). It is necessary to set a speed to enable the low speed alarm.

The alarm range is from 1 km/h to 999 km/h in 1 km/h steps.

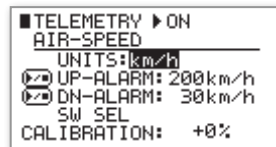
Switch select (SW SEL)

It is possible to select a switch and/or stick position to determine when the alarms should be active.

※ Confirm the low speed alarm starts beeping once activated with the model on the ground.

Calibration (CALIBRATION)

The TLS1-SPD monitors airspeed using a pressure sensor. Sometimes it is necessary to modify the displayed values slightly because of installation differences, etc. Here you can modify the displayed airspeed by inputting a +/- percentage.



TIPS

- By using the Information screen, it is possible to display your desired Telemetry information on the first page, together with the Timer and Flight Mode selection on a screen that customers can customize so that it is easy to check. Initially it is set as Inhibited. Select the telemetry information to be displayed, and allocate it to a position on the screen.

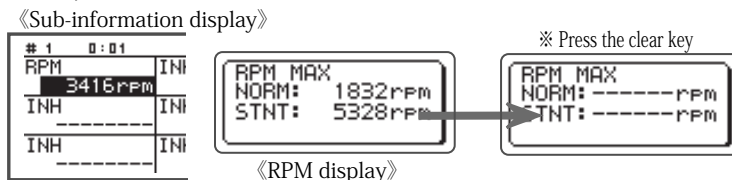
Caution Note

- The Telemetry sensor data is meant as an indication only, and therefore we cannot guarantee the accuracy of any recordings obtained.

Sub Information display • Telemetry set up display

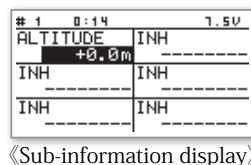
Maximum rotation (RPM) memory reset (Rotation sensor in use)

- Can be reset using the clear key to reset the rpm data.



Altitude reset display (Altitude sensor TLS1-ALT in use)

- The sensor altitude can be reset to 0.0m by pressing the clear key.

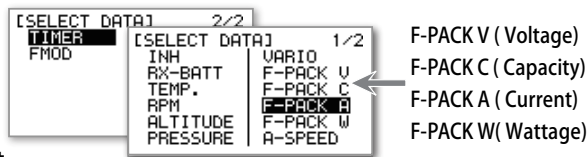


Highest altitude memory reset (Altitude sensor TLS1-ALT in use)

- The sensor highest altitude data can be reset to 0.0m pressing the clear key.

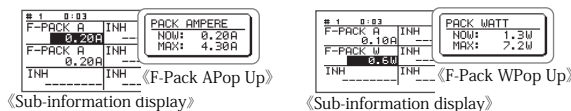
Power sensor display (Power sensor TLS1-PWR)

- When Telemetry Power Sensor(TLS1-PWR) is used, Select the voltage, capacity, current and wattage to display.



Maximum Value (Ampere/Watt) memory reset (Power sensor TLS1-PWR in use)

- Maximum value can be reset by pressing the clear key, after setting the display at each AMPERE or/WATT Pop up.



Maximum Speed memory reset (Air speed sensor TLS1-SPD in use)

- Maximum Speed memory can be reset by pressing the clear key after setting the display at A-Speed Pop up. Indication of the speed memory shall be reset to "0km/h"

※ Each value will be erased after turning off the main power.

TIPS

- By using the Information screen, it is possible to display your desired Telemetry information on the first page, together with the Timer and Flight Mode selection on a screen that customers can customize so that it is easy to check.
Initially it is set as Inhibited. Select the telemetry information to be displayed, and allocate it to a position on the screen.

■ Caution Note

- Rotate the dial to the right to access the first page. Press the dial to choose which information to display.
- The Telemetry sensor data is meant as an indication only, and therefore we cannot guarantee the accuracy of any recordings obtained.

■ All Servos Hold [ALL SERVOS HOLD]

■ Function Explanation

This function holds (locks) all the servos in their current positions. It is used when the operator does not wish the servos to move, typically during some radio adjustments. When this function is set to on, a "SERVO HOLD" message will flash on the left side of the Initial INFO screen.

■ Setting Method

From the setting screen, Servo Hold can be activated by placing the cursor over and then pressing the dial. When this has been done, a confirmation screen will be displayed, and the words "SERVO HOLD" will be flashing. Also, under "MONITOR" on the System List, the display will read "HOLD", and will be flashing.



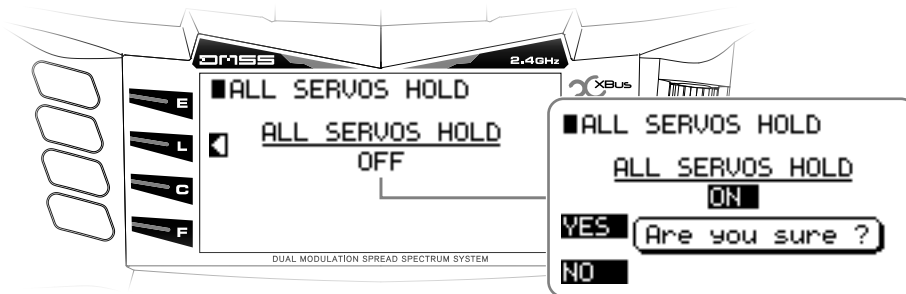
Helicopter



Airplane



Glider



■ Caution Note

- **Warning:** It is very dangerous to set this function to be active at the same time as an electric motor is being connected, as the motor may start moving and not be able to be shut off immediately. Take extra care and attention to disconnect any electric motor before activating this function.

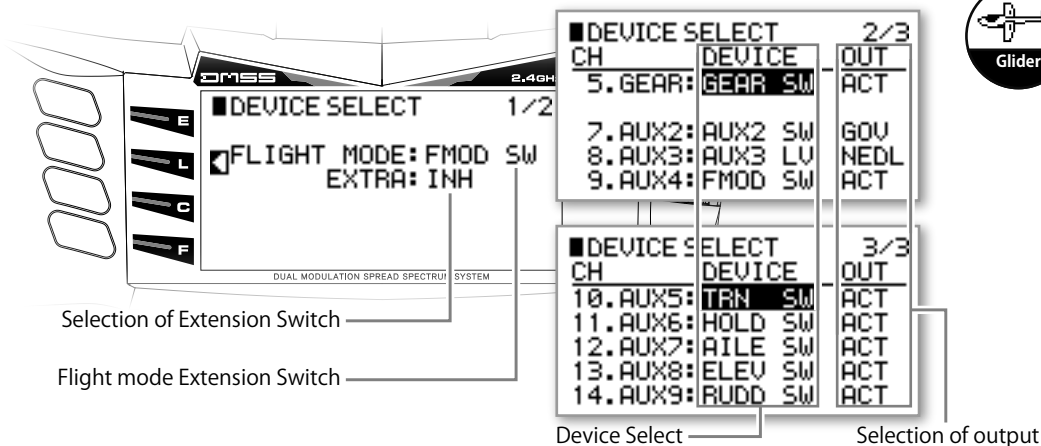
Device Select [DEVICE SELECT]

Function Explanation

This screen is where various flight modes can be set, and where switch functions can be defined. Further, channel output assignments can be made here.

Setting Method

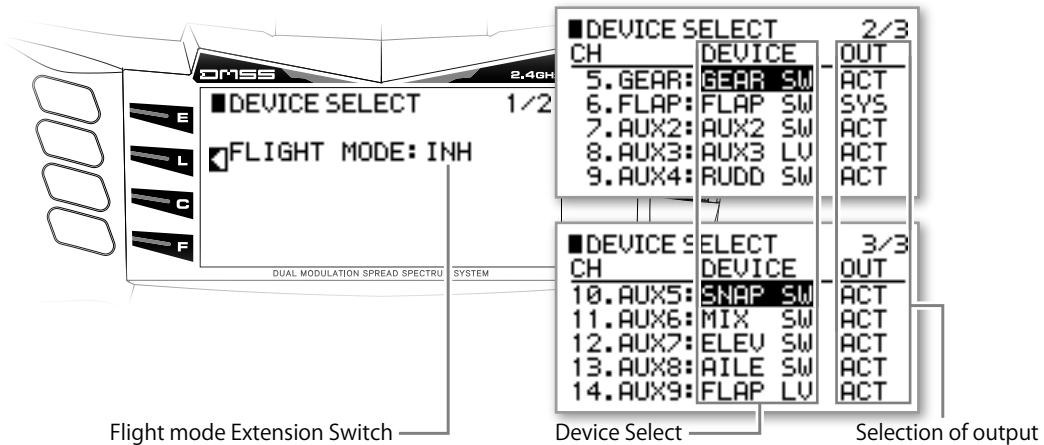
For Helicopter



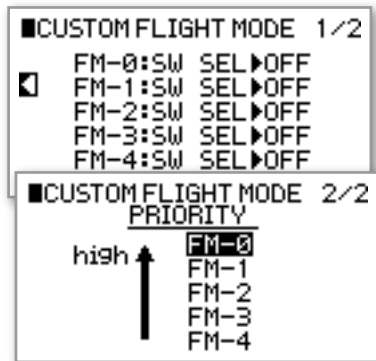
- Flight Mode Switch (FLIGHT MODE) / Flight Mode Extension Switch (EXTRA)
Initially, the Flight Mode selection switch is allocated to "FMOD SW" - it can be re-allocated to another switch if desired. Further, extra flight modes can be activated here. Initially these are inhibited - with this function activated, two (2) extra flight modes can be added.
- Device Select (DEVICE)
Here input devices (switches, levers and trim switches) can be linked to a particular channel. Select the device as desired.
- Selection of output (OUT)
Here the Output configuration of each channel can be specified.
INH: No output.
ACT: Allow output - standard.
GOV: Use this channel for controlling the Governor.
 ※ The settings for the "GOVERNOR" can be set under the function list.
GYR: Use this channel for controlling the Gyro.
 ※ The settings for the "GYRO SENS" can be set under the function list.
NDL: Use this channel for "NEEDLE" adjustment with a Nitro engine.
 ※ The settings for the "NEEDLE" can be set under the function list.



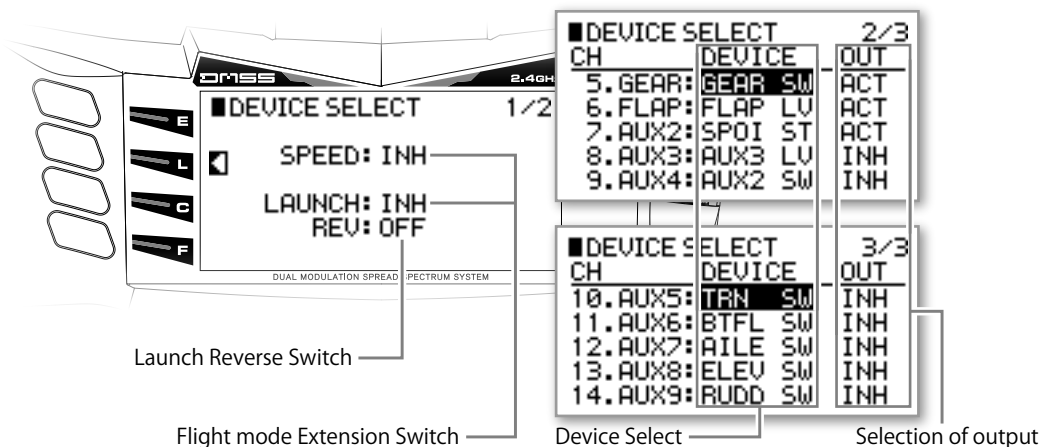
For Airplane



- Flight Mode Switch (FLIGHT MODE)
Initially, it is set to "INH". Select the switch to control flight mode selection here.
- There are two way of selecting the Flight Mode switches.
 - ▶ To choose one of the switches.
By designating the switch location, it is possible to change the flight mode by this particular switch.
 - ▶ To customize your own switch configuration for numerous flight modes.
By choosing the customize flight mode, it is possible to use full flight mode by using several switches as desired.
Optionally, it is also possible to allocate the priority depending on the flight models. By using Switch Select (SW SEL), allocate its switch position with priority.
- Device Select (DEVICE)
Here input devices (switches, levers and trim switches) can be linked to a particular channel. Select the device as desired.
- Selection of output (OUT)
Here the Output configuration of each channel can be specified.
INH: No output.
ACT: Allow output - standard.
SYS: Use this channel for the Flap system.
※ By setting the flap channel to "SYS", the menu "FLAP SYSTEM" under the function List is activated.
GYR: Use this channel for controlling the Gyro.
※ The settings for the "GYRO SENS" can be set under the function list.
PIT: Use this channel for controlling Pitch.
※ By setting a channel as the "Pitch Channel", the "PITCH CURVE" under the function List is activated.



For Glider



- Speed / Launch Switch (SPEED/LAUNCH)
By setting up both a SPEED(Speed Switch)and LAUNCH(Launch Switch)it is possible to set flight Modes.
- ① SPEED (Speed Switch) By setting a Speed switch, it is possible to use this flight mode.
 - Speed Mode (SPEED)
 - Cruise Mode (CRUISE)
 - Thermal Mode (THERMAL)
- LAUNCH (Launch Switch) By setting the Launch switch, it is possible to use the following flight modes.
 - Landing Mode (LAND) Note: Landing Mode cannot be used when 2position switch has been selected.
 - Launch (LAUNCH)
 - Distance Mode (DISTANCE) Note: Only when Customized flight mode switch being used
 - Zoom Mode (ZOOM) Note: Only when Customized flight mode switch being used
 - Free Mode(FREE) Note: Only when Customized flight mode switch being used
- ※ Launch Switch Reverse (LAUNCH REV)
It is possible to switch the Launch Switch position on the Flight Mode switch.
 - NORM : The Upper switch position(POS 0)will be set as LAND(Landing Mode), and the Bottom switch position (POS 2), will be set as LAUNCH(Launch Mode).
 - REV. : The reverses the positions for LAUNCH and LAND - POS 0 becomes LAUNCH (Launch Mode) and POS 2 becomes LAND (Land Mode).
- ② When adding "SPEED/LAUNCH" as a custom flight mode
It is possible to set a custom switch for choosing the Flight Mode when 'Speed/Launch' is selected. It is also possible to select the priority for each flight mode. Select the switch position using the "SW SEL" function then choose the priority for each flight mode.
- Device Select (DEVICE)
Here input devices (switches, levers and trim switches) can be linked to a particular channel. Select the device as desired.
- Selection of output (OUT)
Here the Output configuration of each channel can be specified.
 - INH: No output.
 - ACT: Allow output - standard.
 - MOT: Use this channel for Motor control.
 - ※ The channels which can be allocatable for Motor control are "GEAR"(Gear Channel)and "AUX3"(AUX 3 channel)
 - When the Motor Channel is set, "MOTOR SYSTEM" on the function List becomes activated.



TIPS

- Even though a channel's OUT (Output) can be set to "INH", it is possible to use the channel with a "PROGRAM MIX" (on the function List) as a Master channel. It is also possible to set this under "DEVICE SELECT"
- Touch Select function: When selecting a switch, by operating the switch that you wish to use, the switch will be automatically recognised and be set to that function. It is useful when you are not sure of the switch name.
- It is possible to select from the following three (3) movement options when using a trim lever as an Input device.
 - 2P: 2position movement
 - 3P: 3position movement
 - MO: Momentary Movement

Caution Note

Actually operate the servos and carefully confirm the settings before flying.

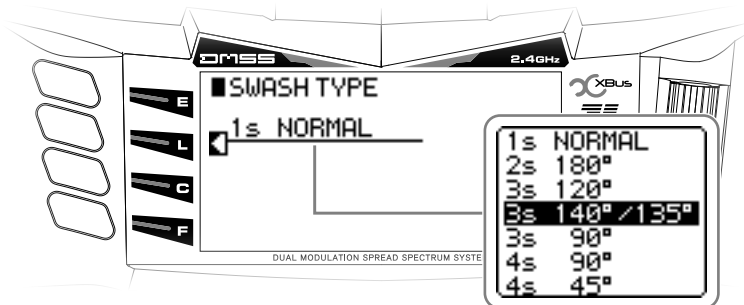
Swash type [SWASH TYPE]



Function Explanation

This function allows electronic CCPM mixing to match the mechanical structure and control of the helicopter swash plate. After making the SWASH TYPE selection, detailed settings should be made using Swash Mixing in the Function List.

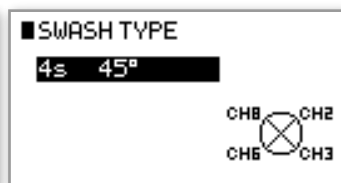
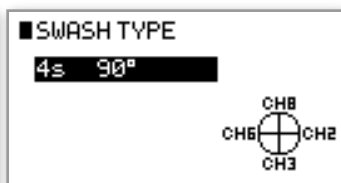
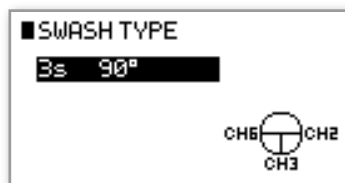
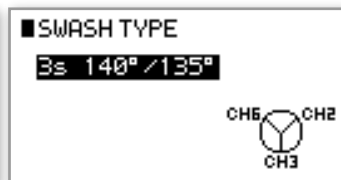
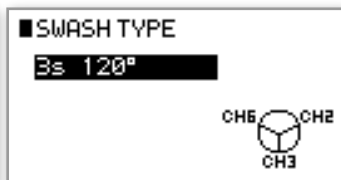
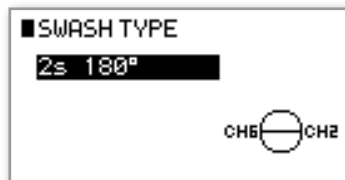
Setting Method



Swash Types

Select the CCPM Swash type on the screen by rotating the dial, and then pressing the dial. This displays a list of the Swash Patterns – select the pattern which matches your helicopter. Initially, it is set to 1 servo Normal. Note that the actual mixing amount and direction setting must be carried out in the System List - "SWASH MIXING".

- SWASH TYPES
 - ◆ 1 Servo Normal
 - ◆ 2 Servo 180°
 - ◆ 3 Servo 120°
 - ◆ 3 Servo 140° /135°
 - ◆ 3 Servo 90°
 - ◆ 4 Servo 90°
 - ◆ 4 Servo 45°



Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

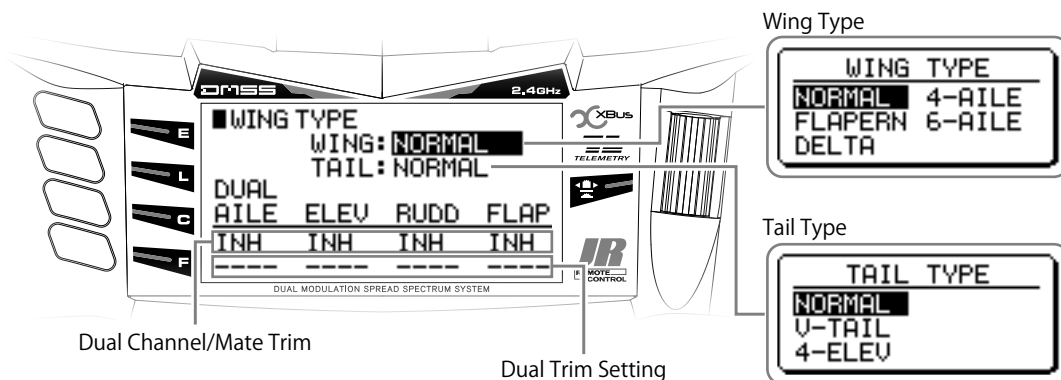
Wing Type [WING TYPE]

Function Explanation

Here the wing type can be set. Dual ailerons and dual flaps, dual elevators, dual rudders, tailless planes, and V-tail wings can be selected.

Setting Method

For Airplane



- Wing Type (WING)

Select the Main Wing Type.

- Normal (NORMAL)

For standard airplane wing types.

- Flaperon (FLAPERON)

For wings with Dual Aileron. Also, mixing Dual Aileron as Flaps is possible.

The following channel outputs are used:

Channel2 (AILE) : Right Aileron (RAIL)

Channel6 (FLAP) : Left Aileron (LAIL)

- Delta (DELTA)

It is possible to set up a Delta Wing to use Elevons.

The following channel outputs are used:

Channel2 (AILE) : Left Elevon (LEVN)

Channel6 (FLAP) : Right Elevon (REVN)

※ The actual meaning of "DELTA" is a defined wing shape, and not a tailless airplane. However, JR does call tailless airplanes deltas (eg the F-102 or Dassault Mirage III).

- 4 Aileron (4AILE)

For wings with Four Ailerons

The following channel outputs are used:

Channel2 (AILE) : Right Aileron1 (RAL1)

Channel7 (AUX2) : Right Aileron2 (RAL2)

Channel5 (GEAR) : Left Aileron1 (LAL1)

Channel8 (AUX3) : Left Aileron2 (LAL2)

- 6 Aileron (6AILE)

For Wings with 6 Ailerons

The Following channel outputs are used.

Channel 2 (AILE) : Right Aileron 1(RAL1)

Channel 7(AUX2) : Right Aileron 2(RAL2)

Channel 9(AUX4) : Right Aileron 3(RAL3)

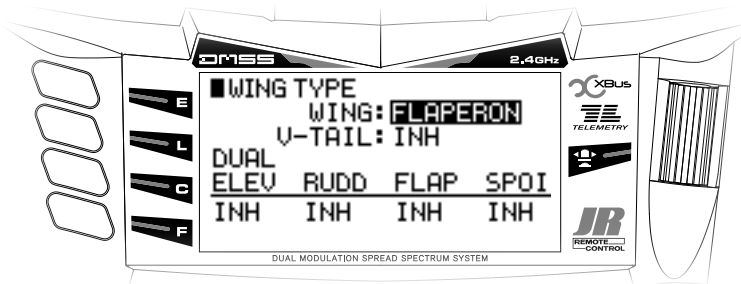
Channel 5(GEAR) : Left Aileron 1(LAL1)

Channel 8(AUX3) : Left Aileron 2 (LAL2)

Channel 10(AUX5) : Left Aileron 3 (LAL3)

- Tail (TAIL)
 - ◆ Normal (NORMAL)
Standard tail wing setting
 - ◆ V-Tail (V-TAIL)
To perform mixing for a V-Tail airplane.
The following channel outputs are used:
Channel 3 (ELEV) : Left Tail (LTAL)
Channel 4 (RUDD) : Right Tail (RTAL)
 - ◆ 4 Elevator (4ELEV)
For models with 4 Elevators
The Following channel outputs are used.
Channel 3 (ELEV) : Right Elevator 1 (REL1) Channel 12 (AUX7) : Right Elevator 2 (REL2)
Channel 11 (AUX6) : Left Elevator 1 (LEL1) Channel 13 (AUX8) : Left Elevator 2 (LEL2)
- Dual Channel (DUAL) / Mate Trim (TRIM)
A Dual channel can be chosen for the following functions. Select the Channel to use for the Dual output. It is also possible to activate trim for the Dual channel, so that operation of trimming on the main function is reflected on the dual channel.
 - ◆ Aileron (AILE)
 - ◆ Elevator (ELEV)
 - ◆ Rudder (RUDD)
 - ◆ Flap (FLAP)

■ For Glider



- Wing Type (WING)
 - ◆ Flaperon (FLAPERON)
Dual Aileron wing setting.
The following channel outputs are used.
Channel 1 : Left Aileron (LAIL)
Channel 2 : Right Aileron (RAIL)
 - ◆ 4 Aileron (4AILE)
For Wings with 4 Ailerons.
The Following channel outputs are used.
Channel 1 (LAIL) : Left Aileron 1 (LAL1)
Channel 9 (AUX4) : Left Aileron 2 (LAL2)
Channel 2 (RAIL) : Right Aileron 1 (RAL1)
Channel 8 (AUX3) : Right Aileron 2 (RAL2)
- V-Tail (V-TAIL)
This is mixing for a V-Tail airplane.
The following channel outputs are used:
Channel 3 (ELEV) : Left Tail (LTAL)
Channel 4 (RUDD) : Right Tail (RTAL)
- Dual Channel (DUAL)
A Dual channel can be chosen for the following functions. Select the Channel to use for the Dual output. It is also possible to activate trim for the Dual channel, so that operation of trimming on the main function is reflected on the dual channel.
 - ◆ Elevator (ELEV)
 - ◆ Rudder (RUDD)
 - ◆ Flap (FLAP)
 - ◆ Spoiler (SPOI)

■ Caution Note

Actually operate the servos and carefully confirm the settings before flying.

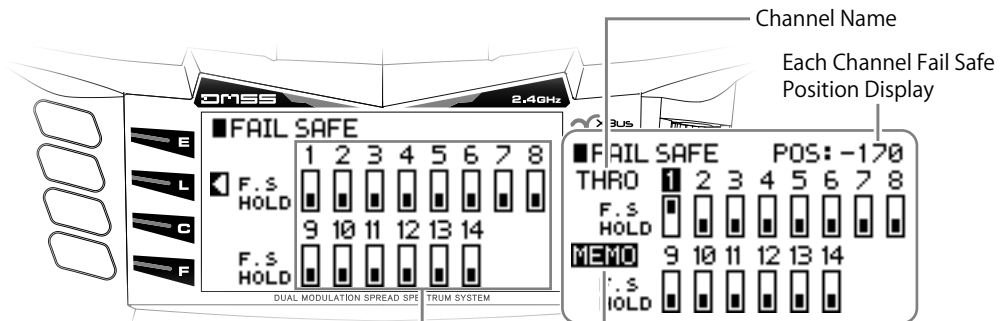
Fail safe [FAIL SAFE]

Function Explanation

If the receiver does not receive a valid RF signal from the transmitter, this function moves the servos to predefined positions, to avoid the scenario of the aircraft crashing at, for example, full throttle. Be sure to set the Fail Safe before flying each aircraft.

Setting Method

This function allows selections to be made for each channel in case of loss of RF signal. "HOLD", maintains the servo positions as they were immediately before the radio signal was lost. This is the default setting. It is also possible to select "FAIL SAFE". In order to set the "FAIL SAFE" positions (the servos move to predefined positions in the event of loss of radio signal), change the switch for each of the channels on the screen to "FAIL SAFE". The memorising of each of the Fail Safe positions is carried out by moving the stick to the desired position and holding it there while pressing the "MEMO" key to activate this function.



The screen switches are set to Fail Safe when the switch is on the upper side, and set to the Hold mode when the switch is on the lower side.

The current position is memorized using the CLR key.

Caution Note

- For safety reasons, engine-powered and electric powered aircraft must have their motive power channels set to the slowest speed.
- If the Reverse Switches or Stick Mode are changed after setting the Fail Safe, the motive power may be set to the Full Throttle position. In order to avoid making this dangerous mistake, be certain to remember to implement the Fail Safe settings after completing the aircraft set-up.
- Before flying, be certain to confirm the failsafe settings by switching off the transmitter power, and observing that the servos move to the positions intended.

Throttle Stick Direction [THRO (SPOI) STICK DIRECTION]



Helicopter



Airplane

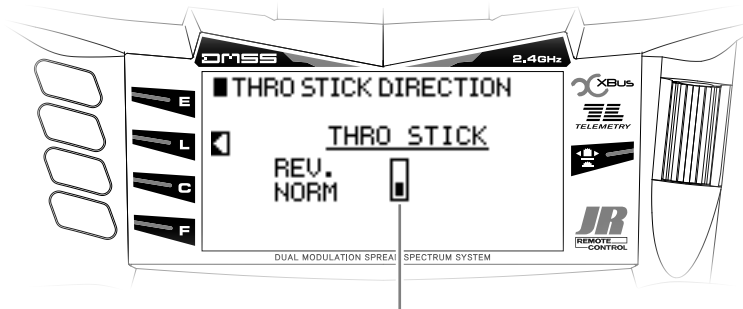


Glider

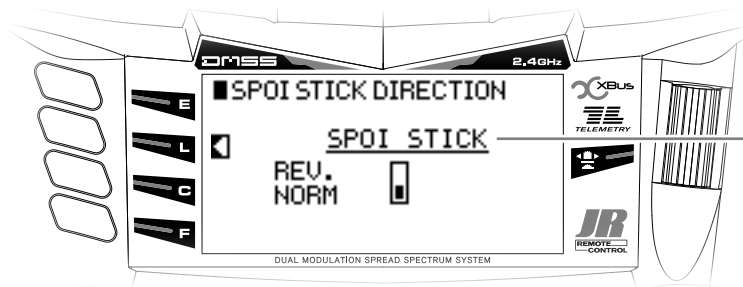
Function Explanation

This enables the Throttle Stick (Spoiler Stick) direction to be reversed without changing the output signal value – the input value gets changed. This is a completely different function from using the Reverse switch function.

Setting Method



REV. Reverse : Upward is slow and Downward is High
NORM Normal : Downward is slow and Upward is High



Stick name shall be changed upon selecting the model type as Glider.

Initially it is set to "NORM" (Downward Slow, Upward High). If necessary set it to "REV" (Downward High, Upward Slow)

TIPS

- It is necessary to use this function (rather than the reverse switch) so that all mixing functions work correctly when flying using this technique.

Caution Note

- Actually operate the servos and carefully confirm the settings before flying.

Stick Mode [STICK MODE]

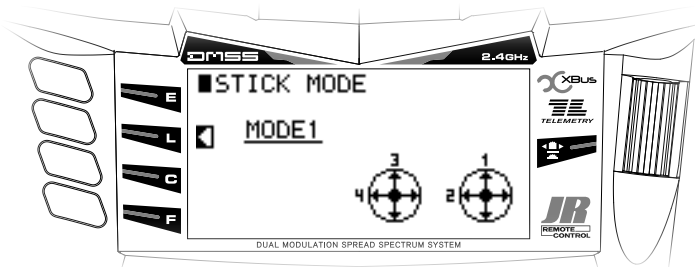
Function Explanation

This function changes the stick mode between Mode 1, Mode 2, Mode 3 & Mode 4. In the USA, Mode-2 is commonly used. In Japan, Mode 1 is the most common configuration.

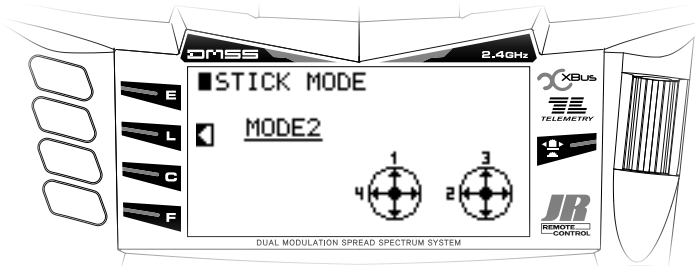
Setting Method

The initial setting is determined by the mode the radio was in when purchased. This function can be used to change this mode.

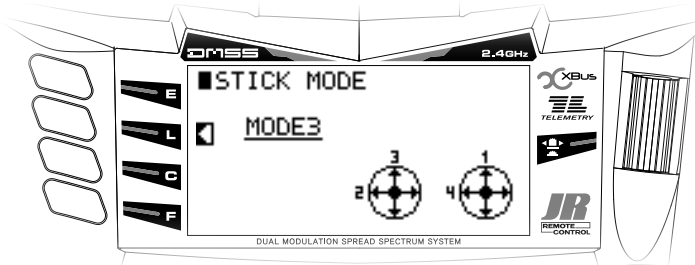
Mode1



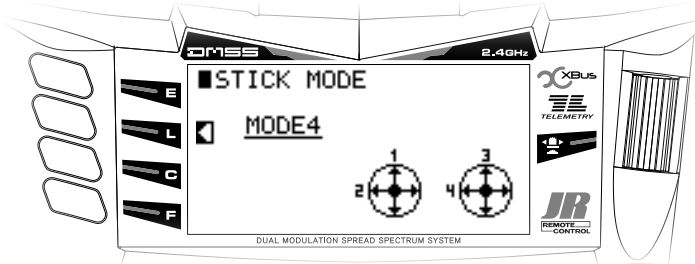
Mode2



Mode3



Mode4



Helicopter



Airplane



Glider

Caution Note

- If the throttle stick position to be changed (between Mode 1 & Mode 2 or between Mode 3 & Mode 4), the throttle stick and elevator stick Spring location requires changing.
- Be sure to Calibrate both stick gimbals after changing the Stick Mode.
Refer to the Page 76 "Stick Calibration (STICK CALIBRATION)"

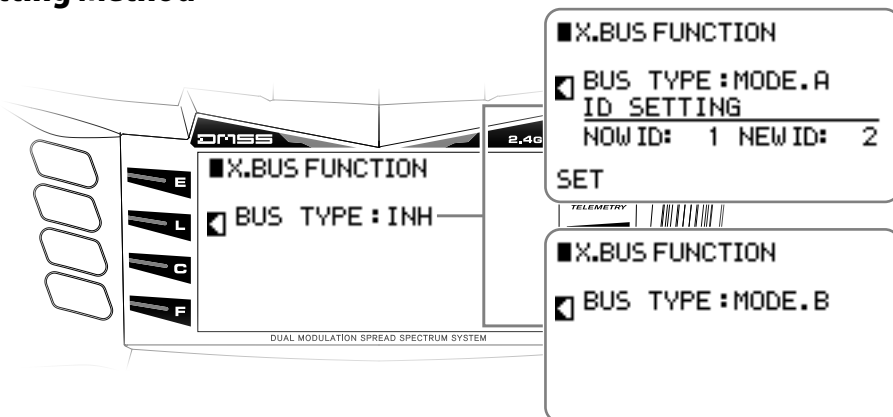
■ XBus Function [X.BUS]

■ Function Explanation

This XG14 has all new X-Bus system using JR's own serial bus data instead of PWM (Pulse Wide Modulation) to communicate with X-Bus products such as servos. Control signals are sent in a serial manner to all channels, with individual servos recognizing their own data from receiver.

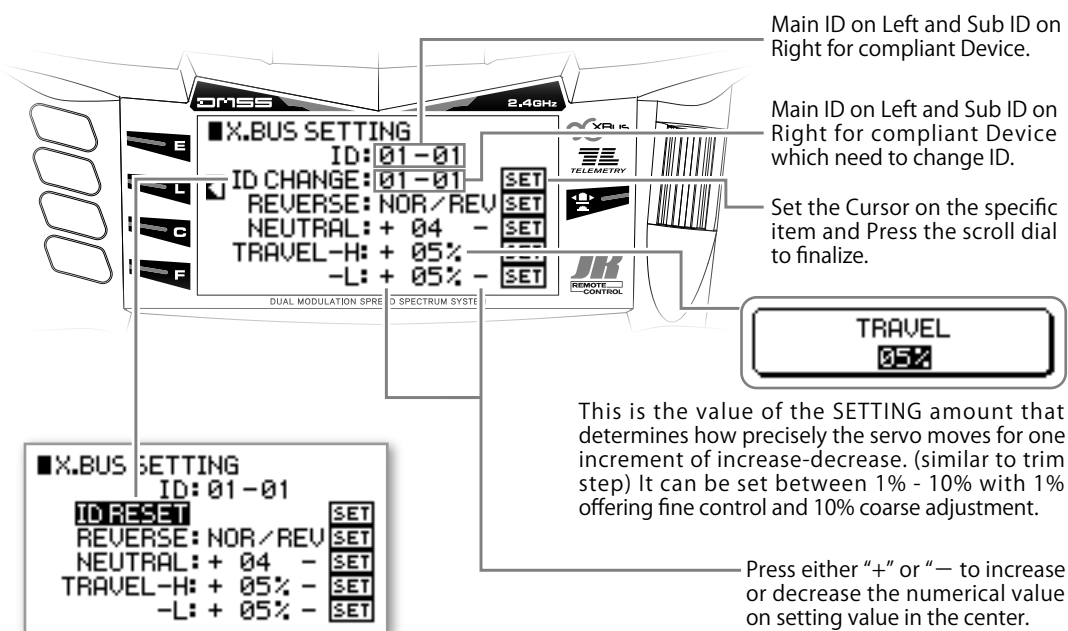
- ※ It is required to use X-Bus capable receiver system in order to perform Serial data transmission. X-Bus servos must be also programmed to be used on certain channels, other wise it will not operate correctly.

■ Setting Method



There are two type of X- Bus available in the program.

- **MODE.A** : This is the JR's own Original mode it corresponds to the X-Bus servo, Gyro system or able to allocate Channel ID from the transmitter.
- **MODE.B** : This is serial protocol mode it is corresponds to Freakware, Beast X and Mikado V-Bar flybarless gyro systems.
Out putting channels are used as follows. Maximum channel is limited to 12channel for this application.
 - 1) Aileron
 - 2) Elevator
 - 3) Rudder
 - 4) AUX1 ((Pitch/Flap)
 - 5) Throttle
 - 6) GEAR
 - 7) AUX2
 - 8) AUX3
 - 9) AUX4
 - 10) AUX5
 - 11) AUX6
 - 12) AUX7
- ※ Note carefully that there will be "NO" PWM output signals from standard ports at the receiver when X.Bus has been activated in MODE.B.
- ※ When using a DMSS Receivers without X.Bus capability BUS TYPE should be set to INH.



- Method of setting and explanation of the each items on X-BUS MODE A.
 - ID : There are two ID exist on this application one is Main ID and second is the Sub ID. Main ID configures channel numbers. Sub ID configures upto maximum of 4 servos, data which can be adjusted individually.
 - ID Change (ID CHANGE)

It is capable to adjust the X-BUS devices through Transmitter. Input both the own ID from X-BUS device and the desired ID channel to be changed. Place the Cursor on "SET" and press the dial to finalize the setting.
 - ID Reset (ID RESET)

It is capable to reset the X-BUS devices as initial setting through Transmitter. Set the Cursor on the "ID CHANGE" press the dial to finalize. "ID CHANGE" shall highlighted text reversed to be changed. Place the Cursor on "SET" and press the dial to finalize the ID RESET.
 - Reverse (REVERSE)

It is capable to set the servo as reverse movement. Set the particular servo's Channel ID and Sub ID, Set either Normal or Reverse Press the dial. Place the Cursor on "SET" and press the dial to finalize for connected device for accomplishment.
 - Neutral (NEUTRAL)

It is capable to set the servo neutral. Set the particular servo's Channel ID and Sub ID, Set the cursor on "+" or "-" to change the neutral value, Place the Cursor on "SET" and press the dial to finalize for connected device for accomplishment.
 - Travel(TRAVEL)

It is capable to set the servo travel. Set the particular servo's Channel ID and Sub ID, Set the cursor on "+" or "-" to change the travel value, Place the Cursor on "SET" and press the dial to finalize for connected device for accomplishment.
- ※ These setting must be accomplish with Transmitter and Receiver being bairnd (Paired) together and X-BUS devices must be appropriately connected with both power turned on.

Note: Be sure to Take off the Bind plug from the receiver bind port, other wise setting cannot be accomplished.

■ Caution Items

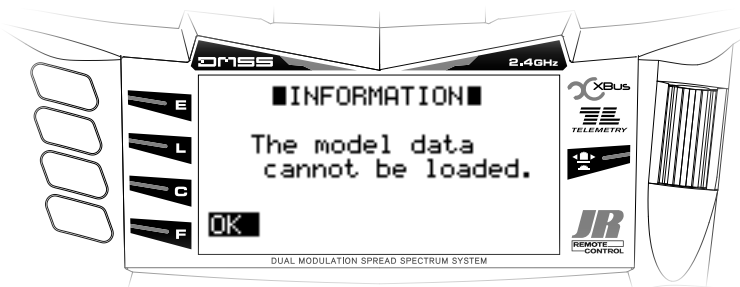
- Actually operate the servos and carefully confirm the setting before flying.

■ Software Error Screens

■ If the Following Messages are Displayed...

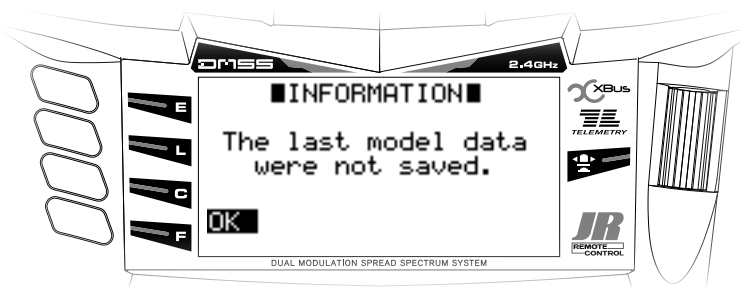
If errors occur in transmitter software operation, error displays are shown to indicate the internal error details.

■ Model Data Reading Failure



- Cause
This is displayed if the model data is initialized, and when there are internal memory operation problems.
- Response
If the message is repeatedly displayed, please contact this company's Service Department.

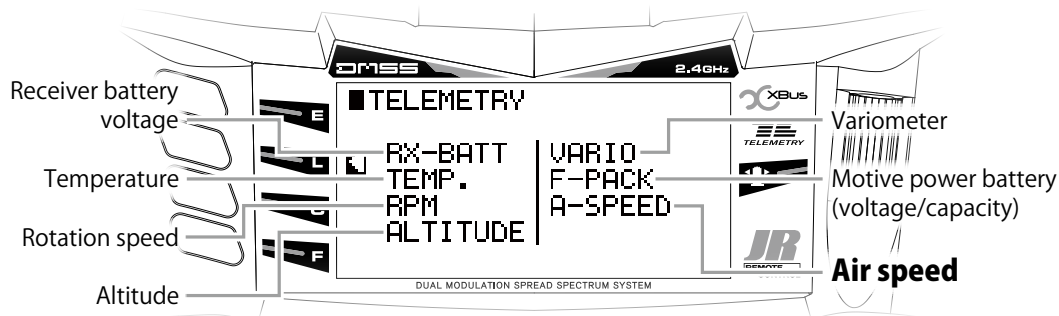
■ This is displayed when the model setting data has not been normally saved.



- Cause
This is displayed if the battery is removed while setting is taking place, and when there are problems in the internal memory.
- Response
If the message is repeatedly displayed, please contact this company's Service Department.

■ Telemetry (TELEMETRY)

■ TLS1-SPD



■ Air speed (A-SPEED)

- Units of measurement (UNITS)

Select the units to display.

km/h: To show the speed in km per hour.

mph: To show the speed in miles per hour.

knot: To show the speed in knots.

- High speed alarm (UP ALARM): Intermittent tone.

Set the over speed alarm.

The default value is disabled (INH). It is necessary to set a speed to enable the high speed alarm. The alarm range is from 1 km/h to 999 km/h in 1 km/h steps.

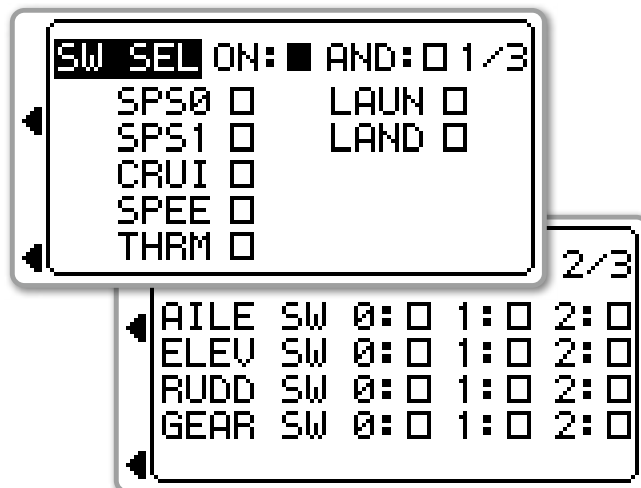
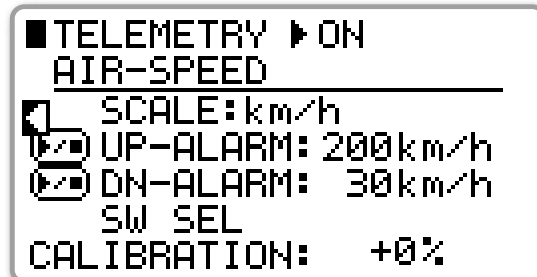
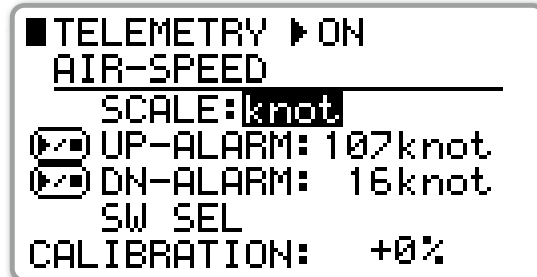
- Low speed alarm (DN ALARM): Constant tone.

The default value is disabled (INH). It is necessary to set a speed to enable the low speed alarm. The alarm range is from 1 km/h to 999 km/h in 1 km/h steps.

- Switch select (SW SEL)

It is possible to select a switch and/or stick position to determine when the alarms should be active.

※ Confirm the low speed alarm starts beeping once activated with the model on the ground.



- Calibration (**CALIBRATION**)

The TLS1-SPD monitors airspeed using a pressure sensor. Sometimes it is necessary to modify the displayed values slightly because of installation differences, etc. Here you can modify the displayed airspeed by inputting a +/- percentage.

- A-SPEED can be displayed on the sub information screen - current airspeed will be displayed.

Maximum airspeed will be recorded. This can be reset using the clear key, or by cycling the transmitter power.

# 1	0:10	6.6V
A-SPEED	RX-BATT	
125km/h	6.7V	
ALTITUDE	TIMER1	
-----	D1 8:47	
PRESSURE	INH	
-----	-----	

XBus functions (X.BUS)

The diagram illustrates the XBus receiver's menu structure. It shows a sequence of screens:

- Function Selection:** A screen titled 'X.BUS FUNCTION' with 'BUS TYPE: INH' selected. A callout shows 'MODE.A' and 'MODE.B' options.
- Setting Selection:** A screen titled 'X.BUS SETTING' with 'ID: THRO-01' selected. A callout shows 'SERVO/CONVERTOR' as a setting option.
- Parameter Adjustment:** A screen showing parameters for 'ID: THRO-01' such as 'REVERSE: NOR/REV', 'NEUTRAL: + 04', and 'TRAVEL-H: + 05%'. A callout explains that the 'TRAVEL' value is set by moving a cursor to the value in the center of icons and turning a dial.
- Final Settings:** A screen showing 'STRETCHER: +00', 'DUMPING: +00', 'DEAD BAND: +00', and 'BOOST: +000'.
- Alarm Settings:** A screen showing 'ALARM LEVEL: 00%', 'ALARM DELAY: 0.5s', 'ANGLE: 120°', 'SLOW START: OFF', and 'STOP MODE: FREE'.

About ID's

XBus components operate on the basis of a main ID and sub ID where:

- The main ID identifies the function of that particular component e.g. aileron, elevator, rudder, throttle, and so forth. The channel name will vary depending on the wing type or swash type being used.
- The sub ID number identifies 1-4 servos moving in unison on the particular function. XBus allows up to four components per function, meaning that each channel can control up to four servos.

It is possible to fine tune the neutral position, servo direction, and travel limits for each sub ID independently.

The diagram shows a transition from a settings screen to a 'NEW ID' selection screen.

- Left Screen (1/3):** 'X.BUS SETTING ID: THRO-01' with options for 'ID CHANGE: THRO-01', 'REVERSE: NOR/REV', 'NEUTRAL: + 04', and 'TRAVEL-H: + 05%'.
- Right Screen (NEW ID):** A table of available IDs:

THRO	FLAP	AUX6
AIL	AUX2	AUX7
ELEV	AUX3	AUX8
RUDD	AUX4	AUX9
GEAR	AUX5	

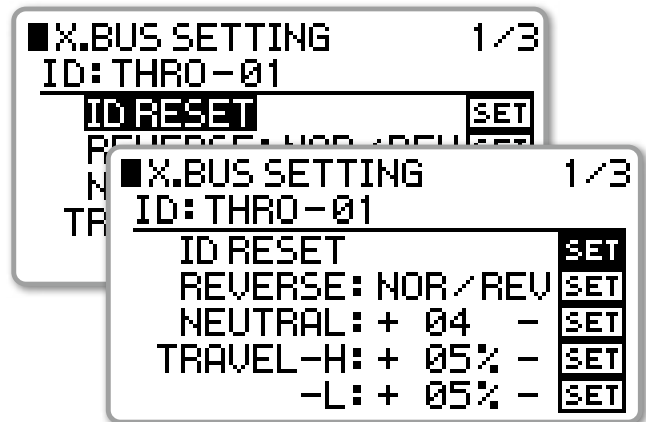
■ ID reset function

The ID reset function has been changed to initialize (reset) all applicable data to factory settings including centering and travel limits.

■ Details of the function

Use this function to initialize (reset) data for the XBus components selected.

Move the cursor to **ID CHANGE** and press the dial. Confirm **ID RESET** is displayed, move the cursor to "SET" and press the dial to execute ID reset. Upon completion, **SUCCESS!** will be displayed in the upper right corner.



■ Collective ID set function

This new function is used to carry out channel mapping for the XPort Duo (XB1-14DRS).

■ Details of the function

Use this function to perform ID mapping.

Move the cursor to **ID CHANGE** and press the dial to select "ID MULTI".

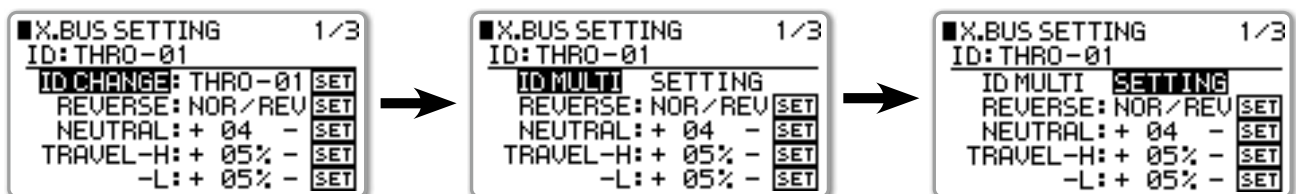
Move the cursor to "SETTING" (to the right of "ID MULTI") and press the dial to enter the collective setting.

Set the main ID and sub ID on this screen. It is essential to press the dial selecting "SET DATA - INIT." to store the settings to the XPort Duo.

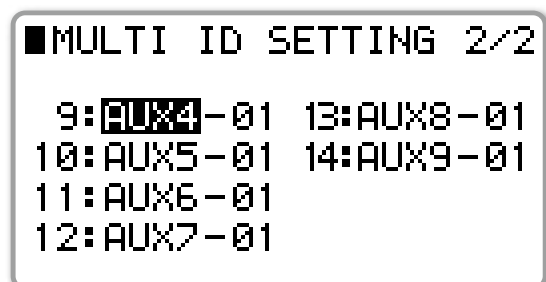
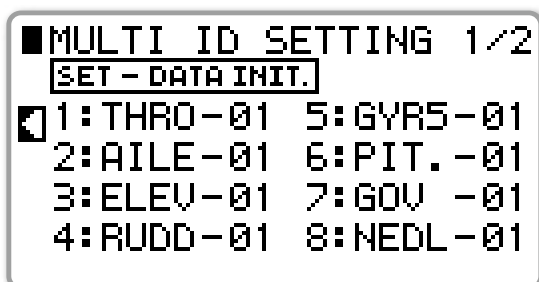
All the data is always over written.

Note: Reverse, centering and travel limit are all initialized (reset) after executing "SET DATA - INIT.".

■ Select the function as shown below.



■ Set the main ID and sub ID on the following screen.



※ The maximum number of channels displayed depends on the number of transmitter channels.

For example, the maximum number of channels displayed is 8 when using a XG8.

■ Execute collective ID mapping by pressing the dial to "SET DATA - INIT."

※ All the properties of the ID will be initialized (reverse, centering and travel limit).

```

■ MULTI ID SETTING 1/2
  SET - DATA INIT.
  1:THRO-01  5:GEAR-01
  2:AILE-01  6:FLAP-01
  3:ELEV-01  7:AUX2-01
  4:RUDD-01  8:AUX3-01
  
```

■ Additional parameters for NX servos

JR NX servos can be programmed (download / setup / upload the settings) using this function.

■ Details of the function.

The programmable elements for JR NX servos have been added on pages 2/3 and 3/3.

■ Setting procedure

First confirm the target main ID and sub ID is correctly selected.

Select the element to be modify. By pressing dial, the current setting data is downloaded from the servo.

- "----" will be shown until the data is successfully downloaded.

```

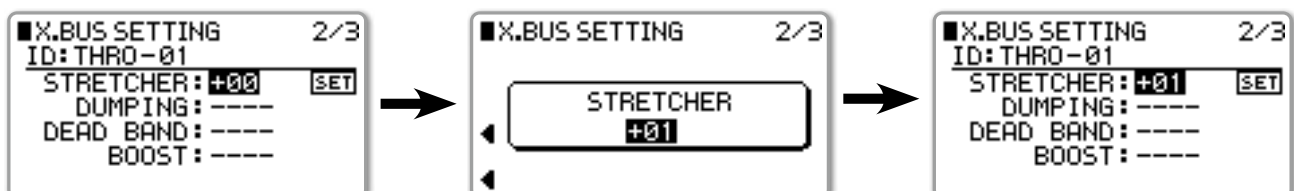
■ X.BUS SETTING 2/3
  ID:THRO-01
  STRETCHER: ----
  DUMPING: ----
  DEAD BAND: ----
  BOOST: ----
  
```

- Once the current data is displayed, new values can be entered in the usual manner. The new values are not stored (uploaded) until the SET is pressed.

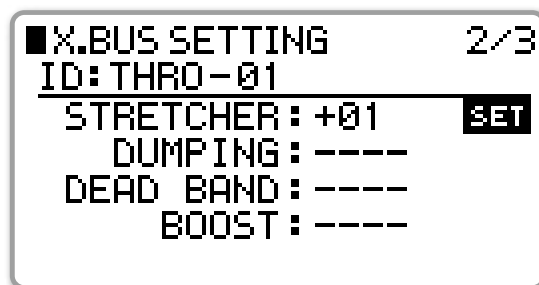
```

■ X.BUS SETTING 2/3
  ID:THRO-01
  STRETCHER: +00 [SET]
  DUMPING: ----
  DEAD BAND: ----
  BOOST: ----
  
```

- The new set values are reflected by servo movement even before the data is uploaded.



- Scroll over to highlight SET and press the dial. The value is stored to the servo.



- Setting parameters.

Holding gain (**HOLDING**) -> Retaining force

+ value increases the retaining force.

- value decreases the retaining force.

[Setting range] -50 ~ +50

Damping gain (**DAMPING**) -> Stopping characteristic

+ value stops the servo earlier. The servo decreases in speed before reaching the target angle.

- value stops the servo later. The servo starts stopping after reaching the target angle.

[Setting range] -50 ~ +50

※ Try to increase the damping gain first to remove any hunting.

※ If there is hunting after increasing the holding gain, either decrease the holding gain or increase the damping gain.

※ Sometimes hunting can occur after decreasing the holding gain. Try increasing the holding gain or decreasing the damping gain.

※ JR NX servos are optimally set up at the factory. Apply +/- 0% for factory settings.

※ The best settings depend on the application. Experiment to find the optimal settings.

- Dead band (**DEAD BAND**)

+ value widens the dead band.

- value narrows the dead band.

[Setting range] -10 ~ +10

- Boost (**BOOST**) -> power to start the motor.

+ value increases the starting power to the motor. This results in a better response but also characteristically rough running.

- value decreases the starting power to the motor. This results in smooth movement but with a slower response.

[Setting range] -999 ~ +999

- Alarm level (**ALARM LEVEL**)

A beep (**high frequency**) sound is used to provide feedback on servo load. Set the percentage of maximum load to alarm at.

[Setting range] 0% ~ 99%

- Delay time for alarm (**ALERM DELAY**)
Set the delay before the alarm sounds after sensing the set load.
[Setting range] 0.0s ~ 5.0s
- Angle (**ANGLE**)
Selectable 120° or 180° total servo travel.
- Slow start (**SLOW START**)
Enable (**ON**) / Disable (**OFF**) the servo slow start function. When selected, on initial power on, the servos will slowly travel to their neutral positions. Useful on large control surfaces.
- Stop mode (**STOP MODE**)
Select the servo action if receiver signal is lost.
 - Free** : The servo is free to move - no power is applied to the motor. Useful if more than one servo is driving a control surface.
 - Hold** : The servo holds its current position after signal loss.

■ Three axis gyro gain setting ACRO mode (※ Except XG6)

Added independent three axis gyro gain settings in ACRO mode when using an airplane three axis gyro.

■ Details of the function.

To enable independent three axis gyro gain (aileron / elevator / rudder), first assign the channels to be used on the [DEVICE SELECT] screen in the system menu [SYSTEM LIST]. Then, set the switch positions and gain values on the [GYRO SENSE] screen in the [FUNCTION LIST].

※ XG14 shown.

■ DEVICE SELECT			2/3
CH	DEVICE		OUT
5. GEAR	GEAR SW		GYRO
6. FLAP	FLAP SW		SYS
7. AUX2	AUX2 SW		GYRO
8. AUX3	AUX3 LV		GYRO
9. AUX4	RUDD SW		ACT

- Gain setting [GYRO SENSE]

※ XG14 shown below.

Yaw axis

■ GYRO SENS			1/4
GAIN1:	POS0:		0%
	RUDD	POS1:D	50%
CH: GEAR		POS2:H	50%
<u>TRIM IN</u>			
◀	INH		

Roll axis

■ GYRO SENS			2/4
GAIN2:	POS0:		0%
	AILE	POS1:D	50%
CH: AUX2		POS2:H	50%
<u>TRIM IN</u>			
◀	INH		

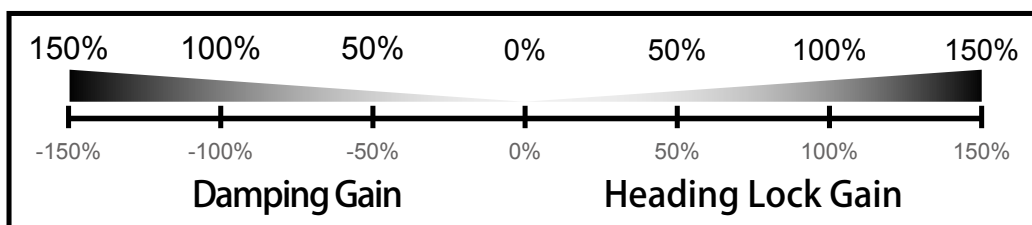
Pitch axis

■ GYRO SENS			3/4
GAIN3:	POS0:		0%
	ELEV	POS1:D	50%
CH: AUX3		POS2:H	50%
<u>TRIM IN</u>			
◀	INH		

It is possible to select two gyro modes. One is heading lock mode, and the other is damping mode. The effects of gains changes in these two modes is shown below.

Please refer to the instruction manual provided by your gyro manufacturer for further information.

Gain control



■ Repair and After Sales Service

■ Be sure to read the warranty carefully

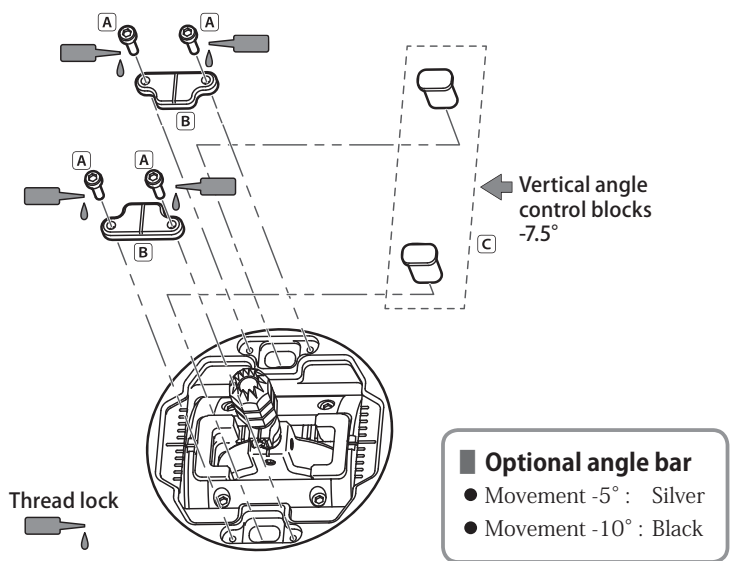
Only if the product is found to be faulty under normal operations, within the warranty period, will we repair the product based on our assessment. The repair will be paid for by the consumer when the damage is due to improper use (crash damage, misuse etc.), or the warranty period has expired, or without the warranty attached (copies will not be accepted). Note that some damage may not be economical to repair. The scope of the warranty is limited to the Proportional Radio System and excludes aircrafts, engines, accessories and any non JR product. Please note we will not be responsible for any loss of model which was set or recorded by the customer, damage caused by mis-use of the product, nor for any compensation for damage to human life, health or property, nor for any damage incidental to the above. When the warranty period has expired, we will repair the product for cost if requested by the customer, if we judge that the product may be used safely following the repair.

- Please note in advance that the warranty period may vary depending on the JR Sales Agent (JR Distributor) in your country. Please contact them for further details concerning the warranty or After-Sales Service (repair services, purchase of parts and/or the accessories, etc). Please save any important model data on a data sheet or on a SD card, before requesting any repair. The product may be initialized to factory settings during the repair process. We will not be responsible for any damage or loss of data.

■ Caution

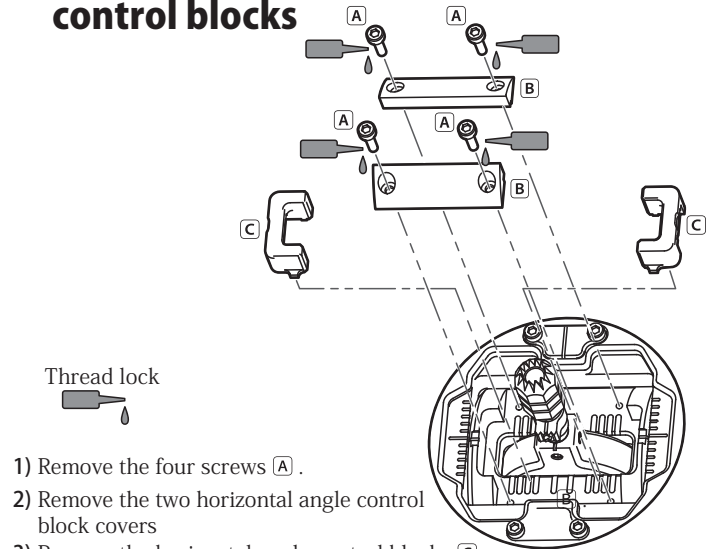
- 1) This product and the associated documents are copyrighted by Japan Remote Control Co., Ltd. It is prohibited by law to duplicate, copy, reprint, or modify the product or documents, either entirely or partially without prior notice and approval.
- 2) This product is not designed to be used as equipment or as an instrument which involves human life including as a medical instrument, aerospace instrument, transport equipment, or weapon system, or any other purpose in which high reliability is required, such as space satellite use. We will not be responsible for physical injury, fire, or any other social damage arising from the improper use of this product or any of the equipment or equipment control systems of the general type as described (but not limited to) the above.
- 3) The product and the contents in the document are subject to change without prior notice due to ongoing development.
- 4) If customers violate any of the terms listed in the 'Caution' section of this document, customers must terminate the use of the product if ordered by our company.
- 5) Please note that regardless of the above, we will not be responsible for any other effects which arise by operating this product.

Installing the stick vertical angle control blocks

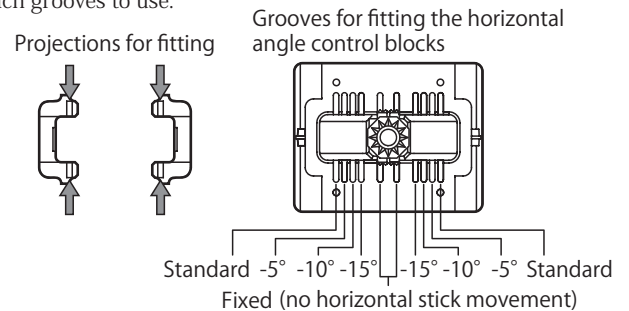


- 1) Remove the four screws **A**.
- 2) Remove the two vertical angle control block covers **B**.
- 3) Insert your choice of vertical angle control blocks **C**.
 three lengths of vertical angle control blocks **C** are available.
 The blocks reduce the range of the stick movement.
 Two vertical angle control blocks (gold) of -7.5° are provided as a standard.
 The other types of angle control blocks are sold as optional items. Please purchase them as required.
- 4) Put the vertical angle control block covers **B** on the blocks and securely tighten the screws **A**.
 Applying a small amount of a weak thread lock agent to the screws it prevent them from loosening (eg JR screw Lock soft type - red).
- 5) After replacing the vertical angle control blocks, be sure to carry out stick calibration.
 * When turning on the transmitter a warning may be issued after replacing the blocks. To release the warning status, display the warning screen, select "setting" and increase the number value for the position of the throttle stick.
 * After carrying out stick calibration, be sure to return the warning value to the original setting.

Changing the stick horizontal angle control blocks



- 1) Remove the four screws **A**.
- 2) Remove the two horizontal angle control block covers **B**.
- 3) Remove the horizontal angle control blocks **C**.
- 4) Securely fit the projections of the horizontal angle control blocks **C** into the grooves for the horizontal angle control blocks.
 The stick movement angle can be adjusted in five levels by selecting which grooves to use.



- 5) Put the horizontal angle control block covers **B** on the blocks and securely tighten the screws **A**. Applying a small amount of a thread lock to the screws is recommended to prevent them from loosening (eg JR screw lock soft type - red).
- 6) After changing the position of the horizontal angle control blocks, be sure to carry out stick calibration.

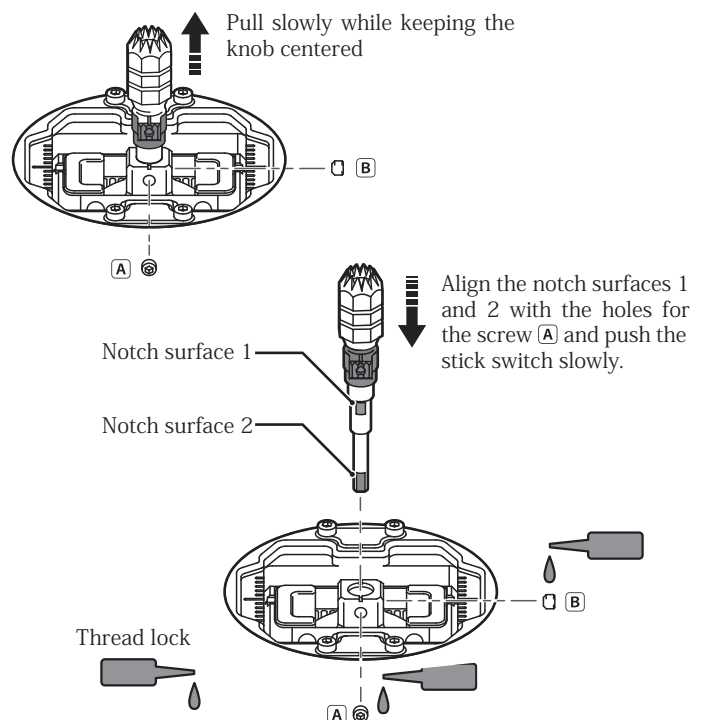
Removing and installing the stick switch

Removing method

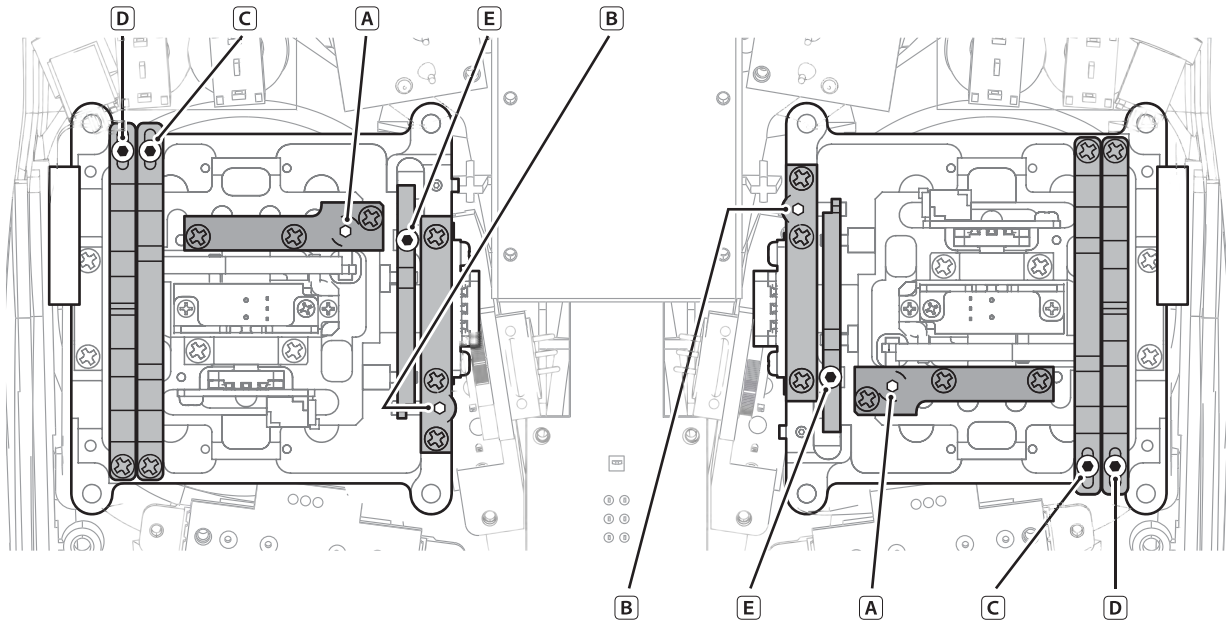
- 1) Place the stick switch knob in the center position as shown below.
- 2) Remove the socket screws **A** and **B**.
- 3) Slowly pull out the stick switch while keeping the knob centered.

Installation method

- 1) Insert the stick switch while keeping the notch surface 1 and the notch surface 2 aligned with the hole for the socket screw **A**.
 Forcefully pushing the stick switch may cause damage to the equipment.
 When the stick switch cannot be inserted easily, check the positions of the notches and screw hole and try to insert it again instead of pushing forcefully.
 Confirm that the stick switch is fully inserted.
- 2) Look through the hole of the socket screw **A** to check that the notch surface 1 is in line with the hole.
 Be sure to tighten socket screw **A** first.
 Confirm that the socket screw **A** is tightened, and then tighten the socket screw **B**.
 Be careful not to install the socket screws in the wrong order. If doing so, the center position cannot be set securely.
 Applying a small amount of a thread lock to the screws to prevent them from loosening (eg JR screw lock soft type - red).
- 3) Confirm that the stick switch knob moves smoothly. [see page 5-10](#) for information on calibrating the stick switch.



Stick spring tension and travel adjustment



Stick spring tension adjustment

- Remove the batteries before carrying out any adjustments.
- Remove the molded rubber sections from the back of the transmitter.
- Adjust the springs to the desired spring tension. By carefully adjusting each of the screws, you can achieve a range of spring tensions.

Vertical axis spring adjustment:

Turn B counterclockwise. This increases the spring pressure to return the stick to center.

If there is play near center, turn E counterclockwise two or three turns.

Do not turn E too much, otherwise it may fall out. Use the included 1.5mm ball ended hex wrench to make adjustments.

Horizontal axis spring adjustment:

Adjust A to achieve the desired stick tension. Use the included ball ended hex wrench, which will need to be inserted at a slight angle. Turn clockwise for less tension.

- Replace the rubber covers.

See the following section for information on changing the throttle stick feel from smooth clutch to ratchet.

Never touch the printed circuit board or any related parts inside the transmitter.

Touching the board may result in electric shock, uncontrolled microcomputer operation, or damage to model data, and normal operation may become impossible.

Elevator and throttle stick configuration (mode change)

Sometimes when changing transmitter modes, you may find it necessary to swap the functions of the elevator and throttle sticks, which would necessitate changing the friction and spring functions.

Either stick can be configured as either elevator or throttle sticks. Screws B to E are adjusted using the included hex wrench.

How to disable the stick return spring and change to a friction throttle

- 1) Turn B clockwise until it stops.
This reduces the spring pressure on the return to center.
- 2) Turn E clockwise until it stops.
This reduces the spring pressure to zero, disabling it to return to center.
- 3) Turn C clockwise for helicopter throttle or D clockwise for airplane. This increases the pressure on the throttle clutch, as either a smooth feel or ratchet.
- 4) Adjust the pressure to the desired strength, while testing the throttle stick feel.

How to disable throttle operation and enable the stick return spring

- 1) Reduce the pressure of the throttle clutch to zero.
Turn C counterclockwise for helicopter throttle or D counterclockwise for airplane. This reduces the pressure of the throttle clutch. When the throttle becomes free and moves with no load, stop adjusting the screw C or D.
Do not loosen the screw too much, otherwise it may fall out.
- 2) Turn E counterclockwise ten times.
Do not turn E too much, otherwise it may fall out.
At this point, do not turn the screw more than ten turns.
- 3) Turn B counterclockwise.
- 4) This increases the spring pressure to return the stick to center.

Adjust the tension as desired.

If there is play near center, turn E counterclockwise two or three turns. "Mode Change" shall be carried out under the "SYSTEM LIST" of "STICK MODE"

Caution

Do not disassemble the transmitter. Disassembly may result in electric shock, microcomputer error or data corruption, disabling normal operation or control.

XBus Function [X.BUS]

Function Explanation

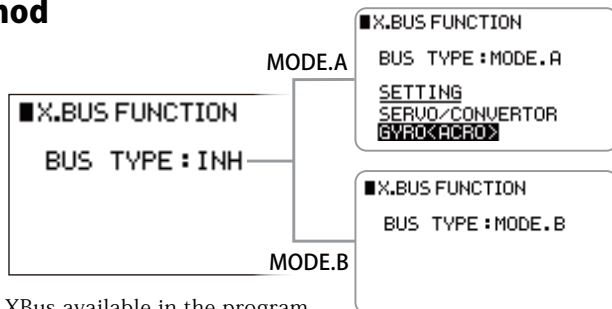
This Mercury can use JR's new XBus system, featuring JR's own serial bus data instead of PWM (Pulse Width Modulation) to communicate with XBus products such as servos. Control signals are sent in a serial manner to all channels, with individual servos recognizing their own data from the receiver.

※ A XBus capable receiver must be used in order to perform Serial data transmission.

XBus devices must also be also programmed, otherwise they will not operate correctly.

Note that the included receiver can provide an XBus output, but this must first be activated. Please see the included receiver instructions for further information.

Setting Method



There are two type of XBus available in the program.

BUS TYPE

- ▶ **INH** : Without XBus
 - ※ When using a DMSS Receivers without XBus capability BUS TYPE should be set to INH.
- ▶ **MODE.A** : This is the JR's own proprietary mode and is used with JR XBus servos, Gyro system, and other accessories.
- ▶ **MODE.B** : This serial protocol mode (UDI) is used by BeastX and Mikado V-Bar flybarless gyro systems.
 - The channels are output as follows.

- | | |
|----------------------|----------|
| 1) Aileron | 7) AUX2 |
| 2) Elevator | 8) AUX3 |
| 3) Rudder | 9) AUX4 |
| 4) AUX1 (Pitch/Flap) | 10) AUX5 |
| 5) Throttle | 11) AUX6 |
| 6) GEAR | 12) AUX7 |

※ Note carefully that there will be "NO" PWM output signals from standard ports on the receiver when X Bus has been activated in MODE.B.

Method of setting and explanation of the each items on X.BUS MODE A.

When "SERVO/CONVERTER" is chosen, XBus parameter settings for XBus compatible servos can be adjusted through the transmitter. Before adjusting the XBus parameters, be sure that power is turned on and the transmitter and receiver are already bound.

Main ID on Left and Sub ID on Right for compliant Device.

Main ID on Left and Sub ID on Right when changing ID.

Set the Cursor on the specific item and Press the scroll dial to finalize.

This is the value of the SETTING amount that determines how precisely the servo moves for one increment of increase-decrease. (similar to trim step) It can be set between 1% - 10% with 1% offering fine control and 10% coarse adjustment.

Press either "+" or "-" to increase or decrease the numerical value.



► XBus ID's

There are two ID's - the main ID and the sub ID. The main ID configures channel numbers, and the sub ID configures up to 4 individual servos, which can be adjusted individually.

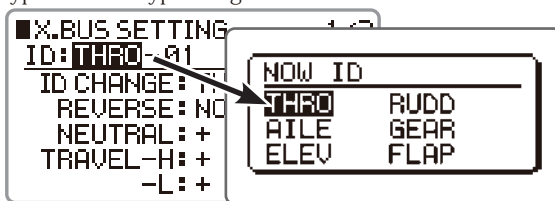
It is recommended to mark the ID number on each individual XBus servo itself to avoid confusion.

※The channel name will vary depending on the wing type or swash type being used.

► ID Change (ID CHANGE)

It is possible to adjust XBus devices through the transmitter. Input the current main + sub ID's for the XBUS device and the new desired ID's.

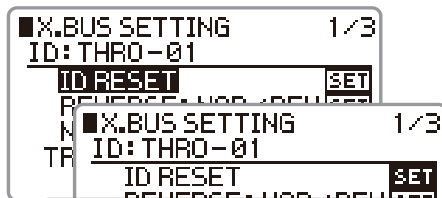
Place the cursor on "SET" and press the dial to finalize the setting.



► ID Reset (ID RESET)

It is possible to reset an XBus device to default settings using the transmitter. Set the cursor to "ID CHANGE" and press the dial to finalize. Place the cursor on "SET" and press the dial to finalize the ID RESET.

※ The ID reset function will reset all connected converters or XBus servos to their default ID such as (THRO(01)-01). Be sure to remove all servo horns or linkages before performing a reset as the servo may move beyond the linkage limitation and damage the linkage or the servo itself. Additionally, if a control surface employs two or more servos, you must be careful to disconnect the servo linkages and servo horns when resetting XBus servos. The high stress of binding the servo may damage the servos, receiver or relative devices by high current consumption and a fire may occur.

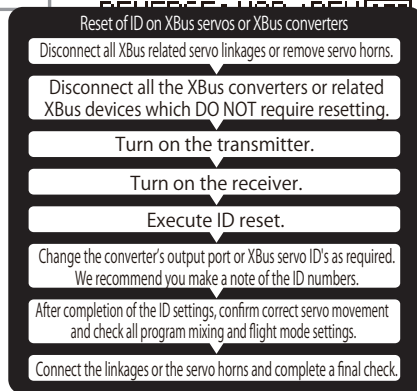


► Collective ID set function(ID MULTI-SETTING)

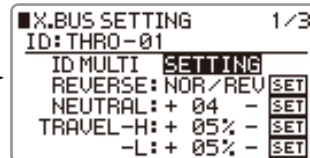
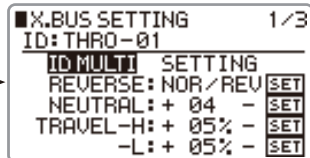
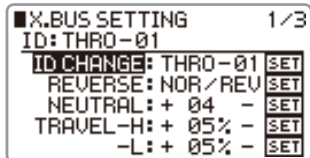
This function is used to carry out channel ID mapping for the XPort Duo receiver (XB1-14DRS). Move the cursor to ID CHANGE and press the dial to select "ID MULTI".

Move the cursor to "SETTING" (to the right of "ID MULTI") and press the dial to enter the collective setting. Set the main ID and sub ID on this screen. It is essential to press the dial selecting "SET DATA - INIT." to store the settings to the XPort Duo. All the data is always overwritten.

Note: Reverse, centering and travel limit are all initialized (reset) after executing "SET DATA - INIT."

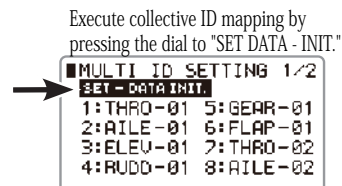


Select the function as shown below.



■ Set the main ID and sub ID on the following screen.

※All the properties of the ID will be initialized (reverse, centering and travel limit).



► Reverse (REVERSE)

It is possible to reverse the servo. Set the particular servo's main ID and sub ID,

set either normal or reverse, and press the dial. Place the cursor on "SET" and press the dial to finalize.

► Neutral (NEUTRAL)

It is possible to set the servo neutral. Set the particular servo's main ID and sub ID, set the cursor on "+" or "-" to change the neutral value, place the cursor on "SET" and press the dial to finalize the setting.

► Travel (TRAVEL)

It is possible to adjust the servo travel. Set the particular servo's main ID and sub ID, set the cursor on "+" or "-" and press the dial to change the travel value, place the cursor on "SET" and press the dial to finalize the setting.

※ These setting must be performed after the transmitter and receiver are bound (paired), and the XBus devices must be connected and powered on.

Note: Be sure to remove the bind plug from the receiver bind port, other wise setting cannot be accomplished.

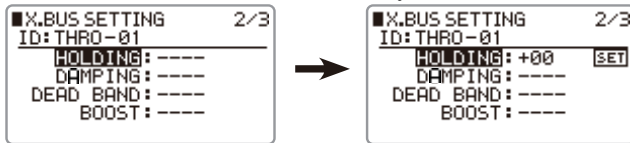
Additional parameters for NX servos

Setting procedure

First confirm the target main ID and sub ID is correctly selected.

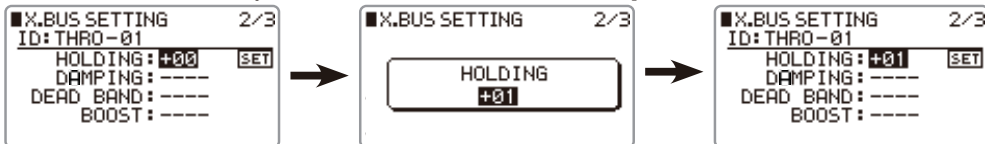
Select the element to be modify. By pressing the dial, the current setting data is downloaded from the servo.

- "----" will be shown until the data is successfully downloaded.



- Once the current data is displayed, new values can be entered in the usual manner. The new values are not stored (uploaded) until SET is pressed.

- The new set values are reflected by servo movement even before the data is uploaded.



- Scroll over to highlight SET and press the dial. The value is stored to the servo.

Setting parameters.

- Hold gain (HOLDING) -> Retaining force
 - + value increases the retaining force.
 - value decreases the retaining force.
 - [Setting range] -50 ~+50**
- Damping gain (DAMPING) -> Stopping characteristic
 - + value stops the servo earlier. The servo decreases in speed before reaching the target angle.
 - value stops the servo later. The servo starts stopping after reaching the target angle.
 - [Setting range] -50 ~+50**
 - ※ Try to increase the damping gain first to remove any hunting.
 - ※ If there is hunting after increasing the holding gain, either decrease the holding gain or increase the damping gain.
 - ※ Sometimes hunting can occur after decreasing the holding gain. Try increasing the holding gain or decreasing the damping gain.
 - ※ JR NX servos are optimally set up at the factory. Apply +/- 0% for factory settings.
 - ※ The best settings depend on the application. Experiment to find the optimal settings.
- Dead band (DEAD BAND)
 - + value widens the dead band.
 - value narrows the dead band.
 - [Setting range] -10 ~+10**
- Boost (BOOST) -> power to start the motor.
 - + value increases the starting power to the motor. This results in a better response but also characteristically rough running.
 - value decreases the starting power to the motor. This results in smooth movement but with a slower response.
 - [Setting range] -999 ~+999**
- Alarm level (ALARM LEVEL)
 - A beep (high frequency) sound is used to provide feedback on servo load. Set the percentage of maximum load to alarm at.
 - [Setting range] 0% ~ 99%**
- Delay time for alarm (ALERM DELAY)
 - Set the delay before the alarm sounds after sensing the set load.
 - [Setting range] 0.0s ~5.0s**
- Angle (ANGLE)
 - Selectable 120° or 180° total servo travel.
 - ▶ 120° : Normal angle
 - ▶ 180° : Retract/Robot etc.
- Slow start (SLOW START)
 - Enable (ON) / Disable (OFF) the servo slow start function. When selected, on initial power on, the servos will slowly travel to their neutral positions. Useful on large control surfaces.
- Stop mode (STOP MODE)
 - Select the servo action if receiver signal is lost.
 - ▶ FREE : The servo is free to move - no power is applied to the motor. Useful if more than one servo is driving a control surface.
 - ▶ HOLD : The servo holds its current position after signal loss.

Setting up the JR Axis airplane gyro using XBus

The JR Axis three axis airplane gyros can be programmed by this transmitter. The transmitter allows access to the same functions as the Axis Assistant, a PC application. Read the manual for the Axis carefully before commencing configuration.

```

X.BUS FUNCTION
BUS TYPE:MODE.A
SETTING
SERVO/CONVERTOR
GYRO<ACRO>
    
```

Details of the function

To enable independent three axis gyro gain (aileron / elevator / rudder), first assign the channels to be used on the [DEVICE SELECT] screen in the system menu [SYSTEM LIST]. Then, set the switch positions and gain values on the [GYRO SENSE] screen in the [FUNCTION LIST].

Transmitter setup

- Before setting gyro gains, first assign gyro gain channel in the 'DEVICE SELECT' menu. Assign gyro gain channel. Then, set the gyro gains in 'GYRO SENS' in the function list.
 - Setting switches
 - Select the switch menu on the gyro gain screen to show the switch selection list. By default, the switch is Flap switch.
 - Delay
 - To set a delay when switching gyro gains, select 'set delay' in the gyro submenu.

```

DEVICE SELECT      2/3
CH   DEVICE      OUT
5. GEAR:GEAR SW  GYRO
6. FLAP:FLAP SW  SYS
7. AUX2:AUX2 SW  GYRO
8. AUX3:AUX3 LV  GYRO
9. AUX4:RUDD SW  ACT
    
```

Gain setting [GYRO SENSE]

Yaw axis

```

GYRO SENS      1/4
GAIN1: POS0:  0%
  RUDD POS1:D 50%
CH:GEAR POS2:H 50%
TRIM IN
< INH
    
```

Roll axis

```

GYRO SENS      2/4
GAIN2: POS0:  0%
  AILE POS1:D 50%
CH:AUX2 POS2:H 50%
TRIM IN
< INH
    
```

Pitch axis

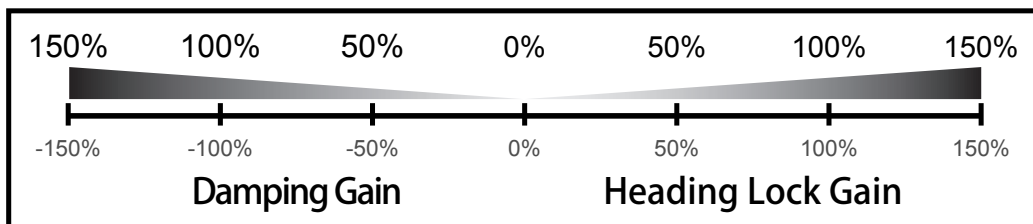
```

GYRO SENS      3/4
GAIN3: POS0:  0%
  ELEV POS1:D 50%
CH:AUX3 POS2:H 50%
TRIM IN
< INH
    
```

It is possible to select two gyro modes. One is heading lock mode, and the other is damping mode. The effects of gains changes in these two modes is shown below.

Please refer to the instruction manual provided by your gyro manufacturer for further information.

Gain control



Gyro setup - page 63 of the Axis manual

Select GYRO(ACRO) in the XBus settings.

Flap Channel assignment

If the flap channel is used (default is channel 6), be sure it does not clash with the gain adjustable channel.

Wing type setting

First, select the main wing type.

※ Under the system List, WING TYPE main wing setting should be "NORMAL" Tail wing should be as "INH"

Caution note

- Actually operate the servos and carefully confirm the setting before flying.

JR/DFA™
RADIO SYSTEM

The contents and specifications are subject to change without notice.