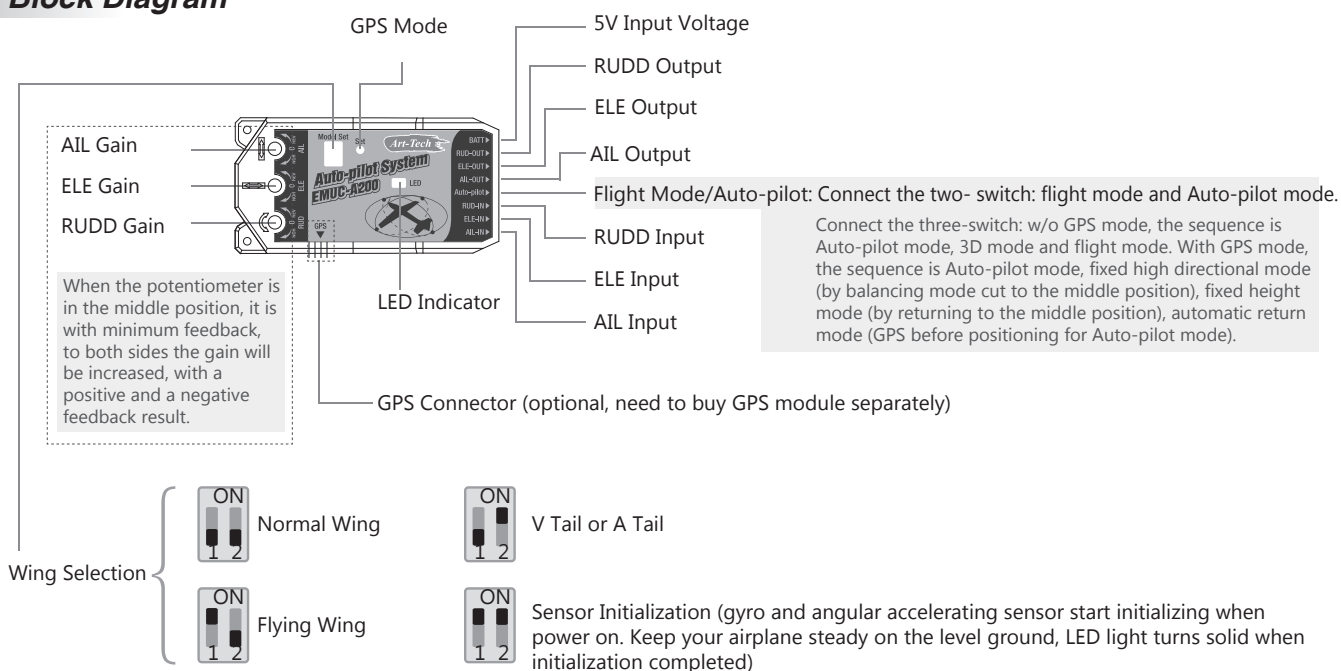# Art-Tech
# EMUC-A200 Auto Pilot Instruction Manual

## Features

EMUC-A200 system is designed to provide a high precision self-correction and superb accurate stabilization for your airplane. This system will help you to become more confident in flight.

1. Safe and reliable design.
2. Inertial vector measuring, Barometer, applicable to all weather.
3. Compatible with great range of fixed wing designs.
4. Incorporated with PID smart control, leaving every adjustment to the equipment itself.
5. Multiple flight modes are available; covering pilots from beginner to 3D Pilots.
6. 3-Axis stabilization.
7. Smart self-correction. (Input full control, system will lock the travel at 45 degree).
8.GPS "Home" point flight back compatible (Optional).

## Block Diagram

GPS Mode

5V Input Voltage
RUDD Output
ELE Output
AIL Output

AIL Gain
ELE Gain
RUDD Gain

Flight Mode/Auto-pilot: Connect the two- switch: flight mode and Auto-pilot mode.

Connect the three-switch: w/o GPS mode, the sequence is Auto-pilot mode, 3D mode and flight mode. With GPS mode, the sequence is Auto-pilot mode, fixed high directional mode (by balancing mode cut to the middle position), fixed height mode (by returning to the middle position), automatic return mode (GPS before positioning for Auto-pilot mode).

RUDD Input
ELE Input
AIL Input

When the potentiometer is in the middle position, it is with minimum feedback, to both sides the gain will be increased, with a positive and a negative feedback result.

LED Indicator

GPS Connector (optional, need to buy GPS module separately)

Wing Selection

ON 1 2 — Normal Wing

ON 1 2 — V Tail or A Tail

ON 1 2 — Flying Wing

ON 1 2 — Sensor Initialization (gyro and angular accelerating sensor start initializing when power on. Keep your airplane steady on the level ground, LED light turns solid when initialization completed)

## Installation

Orientate the receiver horizontally and keep the connector toward the tail. Please note: locate the receiver as close as possible to the CG with good shock absorption material to realize the max optimum effect.

(Installation sketch map)

Heading Orientation

**Notice: Fix your receiver tightly and keep the connector toward the tail.**
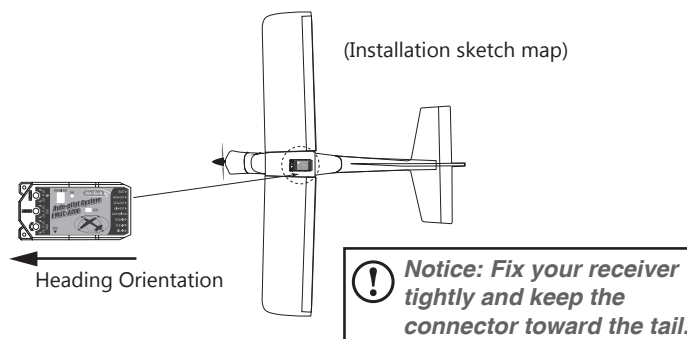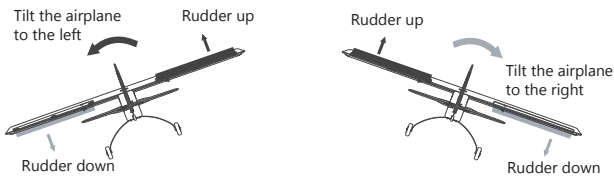
## LED Lights Instruction

1. Without GPS module, LED light solid.
2. Without GPS but sensor is in the state of initialization, LED light quick flashing when power on; keep the airplane steady and level on the ground till the LED turns solid, this indicates you are ready for flight.
3. GPS module connected and successfully bound, LED light flashes at 2HZ speed.
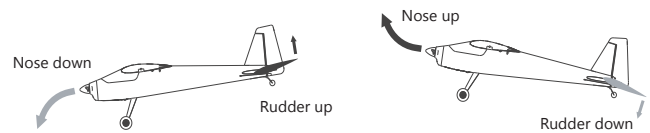
## Flight Mode

1. Leveling Mode: without any input, system automatically corrects the surface to keep airplane in level. When you input the max control, system will lock the pitch and roll at 45 degree.
2. 3D Mode: accurate stabilization makes 3D maneuvers easier and more accurate
3. Altitude and attitude Mode: Airplane flies at fixed altitude and direction
4. Altitude Mode: Airplane flies at the altitude that you desired.
5. GPS Mode: Airplane flies back to the "Home" point that set at the current altitude. Please you need the keep the throttle on.

## Adjustment

1. Pitch and roll correction direction and gain Adjustment. Power on and set the receiver to leveling mode, clockwise and anticlockwise turn the gain button to appropriate amount and direction. Center point is neutral position. (two much gain will cause the airplane wobbles in the air)



Tilt the airplane to the left    Rudder up          Rudder up

Tilt the airplane to the right

Rudder down                     Rudder down

Nose down                      Nose up

Rudder up                      Rudder down

If this axis offset direction is wrong, turn the gain button to opposite direction。        If this axis offset direction is wrong, turn the gain button to opposite direction

2. Yaw gain and direction adjustment. Power on and set the receiver to 3D mode, then clockwise or anticlockwise turn the gain button to appropriate amount and direction. (two much gain will cause the airplane wobbles in the air)



Nose turn right          Nose turn left

Rudder turn left                        Rudder turn right
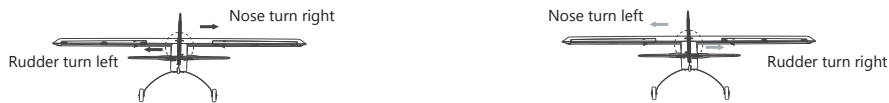
If the amount of the auxiliary is opposite, please adjust the direction gain adjusting knob to the opposite direction.

3. Surface control direction under normal mode and leveling mode should be the same.
4. Transmitters trim fine tuning. Set the receiver at 3D mode and fine tune the trim accordingly to keep the surface accurate.
5. Set the receiver to normal mode and check the servo linkage to make sure they are at the neutral position.
6. When temperature difference goes high between indoor and outdoor and airplane loose stability under leveling mode; Please initialize the sensor to eliminate this situation. (Turn both PID "ON", power on receiver and keep the airplane steady and level on the ground till the LED light turns solid. You only need to do this as needed.)

## GPS Mode Instruction (optional, need to buy GPS module separately)

Connect GPS module and power on the receiver, all flight modes are set through 3-position switch of Channel 4
1. Leveling Mode.
2. Altitude and Attitude Mode.
3. Altitude Mode.
4. GPS Mode, if GPS lost and malfunction occurs, system automatically changes to leveling mode. Please note only with 6 more satellites we can set the home point. Press and hold setting button for 3 second to set the home point When home point is successfully set the led light will turn sold for 3 seconds and keep flashing. Once you set the "Home point", it would saved in the system and reset it if needed.
5. When GPS mode activated we will have four different flight mode (leveling mode, Altitude and attitude mode and GPS "Home" Mode).

**SHENZHEN ART-TECH R/C HOBBY CO.,LTD**

**MADE IN CHINA**