

LED OPERATING ERROR DESCRIPTIONS

● LED Indication

Setup LED Condition	Error	Possible Cause
Flashing Red, Blue & Green	No Signal	The Transmitter is turned OFF or the ESC is not plugged into receiver correctly.
Slowly Flashing Blue & Red	Abnormal Motor Rotation	Damaged motor and/or motor sensors. Also check sensor cable.
Slowly Flashing Red & Green	Low Battery	The battery voltage is below the Voltage Cut-Off limit or the battery could be damaged.

● LED Indication when the Neutral

Setup LED Condition	Error	Possible Cause
Flashes x 1 Red	Sensor Error	The sensor cable is unplugged or damaged, or the motor and/or motor sensors are damaged.
Flashes x 2 Red	Thermal Protection of FET	The ESC has overheated and the thermal protection feature has shut it down. Ensure Power Mode, gear ratio and Timing Advance are not too high. Ensure the number of turns of the motor is not too low.
Flashes x 3 Red	Thermal Protection of MOTOR	The motor has been overloaded. Check cooling fan (install if necessary), servo(s) and other equipment.
Flashes x 4 Red	Thermal Protection of BEC	The BEC has been overloaded. Check cooling fan (install if necessary), servo(s) and other equipment.

SPECIFICATIONS

- Working Voltage: 3.7V - 7.4V
- Motor Type: For Brushless Motor (Sensor Type) Only
- Dimensions: 31.0 x 36.8 x 19.5mm
- Rated Current: 1000A/Phase *1
- Compatible Brushless Motor: 3.0T or greater (LiPo 1 cell)
4.5T or greater (LiPo 2 cell)
- Weight: 39.3g (w/o Power Capacitor)

*1 Transistor rated value is at 24°C

WHAT'S INCLUDED

- Power Capacitor 1pc.
- Sensor Cable 1pc.
- Capacitor Cover 2pc.
- Cooling Fan 1pc.
- Screw for installation of Cooling Fan 4pcs.
- Screw for capacity cover 2pcs.
- 12 AWG Power Wire 1m.
- Shrinkable tube 5 pcs (each different colors)
- User Manual 1pc.

TROUBLESHOOTING

Problem	Cause	Solution
Servo(s) work, but motor does not run	ESC is not connected properly.	Plug ESC into channel 2 and verify all connections and polarity
	Thermal protection Activated	Allow ESC to cool down sufficiently
	Wire or connector is disconnected	Verify that all connections are tight and secure
	Motor wires are connected incorrectly	Reconnect motor wires correctly per diagram on front page
	Motor is damaged	Replace or repair motor
Servo(s) do not work	ESC is damaged	Repair ESC
	Transmitter and receiver not paired	Pair (Bind) transmitter and receiver
	ESC not connected properly	Plug ESC into channel 2 and verify all connections and polarity
	ESC is damaged	Repair ESC
	Transmitter is damaged	Repair Transmitter
Motor runs backward even though holding throttle forward	Receiver is damaged	Repair Receiver
	Throttle reverse setting is changed after the setup	Set throttle reverse correctly
Motor runs slowly or has no acceleration	MODE 1 Cut-Off Voltage is active.	Check the setting of Mode1 or Replace and Charge Battery.
	Pinion gear is too large for motor	Use smaller pinion gear
	The setting of transmitter is changed after the setup	Reset the setup of ESC
	Battery is faulty or motor is damaged	Replace battery or repair or replace motor
	ESC is damaged	Repair ESC
ESC is overheating and going into thermal shutdown	The motor is not compatible with this ESC	Use motor compatible with ESC specifications
	Battery nominal voltage too high	Use recommend battery
	Incorrect gearing or binding in drive-train	Adjust gearing or repair drive-drain
	Inadequate cooling	Improve cooling for ESC or use optional cooling fan
	Values for Boost Rate, Boost Acceleration, Turbo set too high	Lower values for Boost Rate Boost Acceleration, Turbo or turn them OFF
Motor cannot stop, keeping slow rotation	The setting of transmitter is changed after the setup	Reset the setup of ESC
	ESC is watered	Turn off, remove battery and dry ESC
	ESC is damaged	Repair ESC
ESC works intermittently	Motor wire or Battery wire is too close to receiver or antenna	Keep motor wire or battery wire away from receiver or antenna
	Antenna of your car is too short	Keep antenna out of car and straight.
	Receiver is damaged	Repair receiver
	Loose connection	Check all connectors to ensure they're tight
Car do not run backward	ALB (antilock brake system) of Transmitter is on. Or Reverse function of ESC is OFF.	Turn ALB of transmitter OFF. Turn Reverse of ESC ON.

SERVICE and SUPPORT



SANWA ELECTRONIC INSTRUMENT CO.,LTD.

1-2-50, YOSHIDA HONMACHI
HIGASHI OSAKA, 578-0982 JAPAN
PHONE : 81-72-962-1277
FACSIMILE : 81-72-964-2831



ESC Specialized for Brushless Motor

SV-D2

670A02597A

USER MANUAL

Thank you for purchasing SV-D2
Before you start to use your new ESC, please read these instructions carefully to enjoy optimum performance.
Keep this manual in a safe place for future reference.



PRECAUTIONS AND WARNINGS

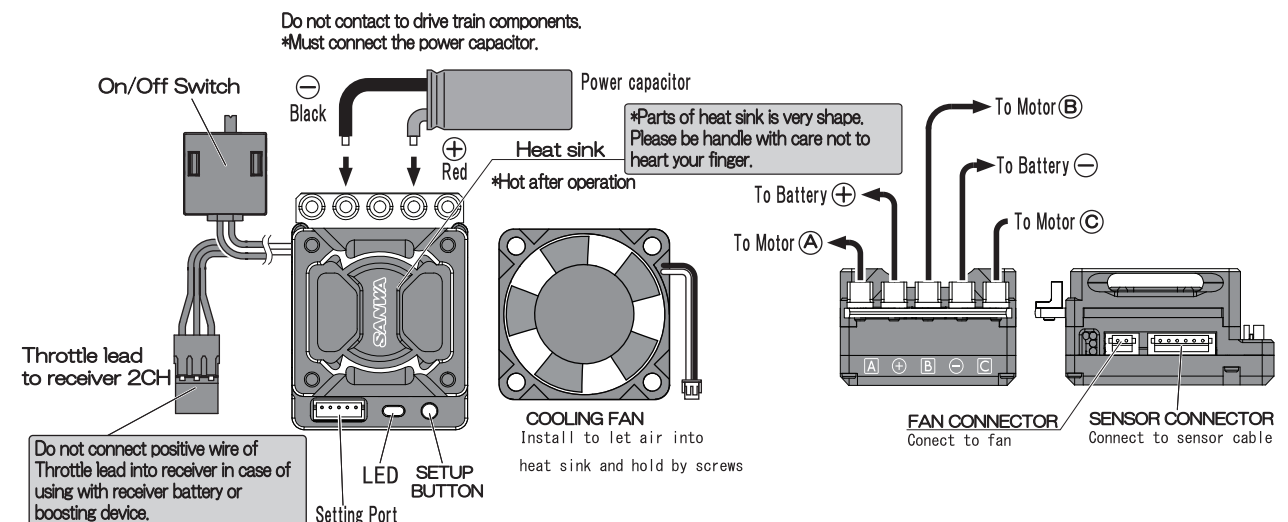
- This ESC is designed for use with SANWA 2.4GHz radio systems. Functionality of this ESC with radio system bands other than SANWA may differ. Carefully check the function of the radio system when a brand other than SANWA is used.
- When soldering your battery connector and battery wires to the ESC, please observe correct polarity. Plugging the battery into ESC with reverse polarity will damage the ESC beyond repair!
- Be careful to solder silicone wire into your ESC or motor correctly. If battery wire is removed while driving, it'll lead to no control of receiver and it's very dangerous.
- This ESC is not waterproof. Do not run through water or allow the ESC to become wet with moisture or the ESC can be damaged.
- This ESC is not compatible with sensorless type brushless motor.
- Maintain your motor on a regular basis to ensure high performance. Degradation of motor performance can put undue stress on the ESC, resulting in damage to the ESC.
- This ESC is designed for use with 4.5T or greater (w/2S LiPo) sensored brushless motor only. In case of using blow 4.5 T motor with Li-Po 2 cell. Please carefully set Boost Rate, Boost Acceralation, and Turbo. (Inproper setting will damage the product)
- Do not hold full throttle under no-load operation of motor. Too much revolution may result in damage to your motor or ESC.
- When soldering the motor and battery wires to the ESC, be careful not to overheat the mounting posts or damage can result.
- The power capacitor installed on the ESC is mandatory for proper use. Do not remove the power capacitor.
- Always disconnect your battery from the ESC when not in use.
- Fix SV-D2 in your car so securely that it will not be removed by impact.

SV-D2 Features

- Compatible with SXR mode
- Basic 4 programs and 10 programs mode are installed. (Require to update firmware Ver.01.04-100 for PROGRAM BOX Gen2)
- Extended function can be set by CODE10 function. (M17/M12S/M12S-RS/EXZES ZZ/ MT-44/ MT-S)
- Extended function is only capable to use SSL System with CODE10 function. (Boost rate, Turbo, Boost Start, Boost Acceleration, Neutral Dead Band)
- Boost function and Turbo function are installed.
- High capacity regulator is installed (6.0V-3.0A)
- Multi Protector System is installed. To protect speed controller from over heat and motor issues.
- Aluminum capacitor cover.
- Set cut off battery function is capable to use variable battery. When working cut off battery function, speed controller will be slow down to avoid declining battery voltage. In case of declining more battery voltage, stopped working motor.
- Compatible with SSL system
Compatible transmitter and receiver (M17/M12S/M12S-RS/ EXZES-ZZ/MT-44/MT-S with RX-491/RX-482/RX-472/RX-47T) can set SV-D2 setting values without any other connection. (*RX-491 is only compatible with M17)
Data of motor RPM, battery voltage, SV-D2, and motor temperature (if motor has temperature sensor) can be displayed on the transmitter by Telemetry function. *In case of using CODE and CODE5 function in AUX menu, please turn off CODE06-10 TELEMETRY & CODE ASSIGN function.
- Capable to use 30 mm cooling fan.

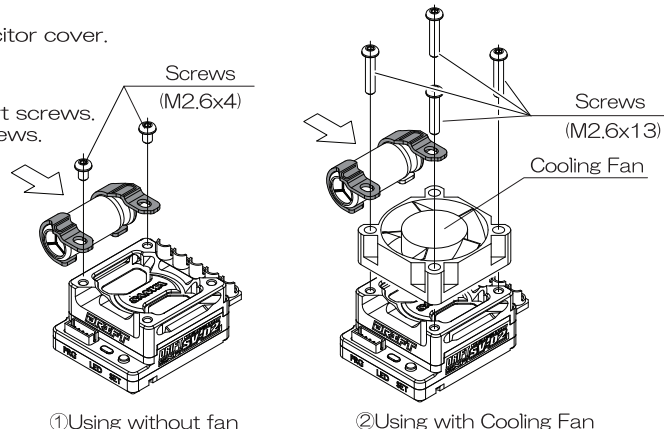
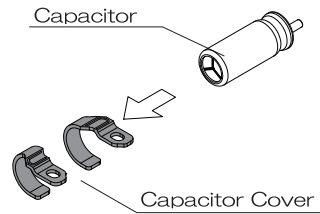
OVERVIEW, CONNECTIONS, AND MOUNTING

- SV-D2 connect to battery and motor with 12AWG power wire. When soldering, please make sure collect way. When soldering, please do not touch the soldering tool over 5 seconds.
- *12AWG power wire is black. Please do make sure attachment for battery is correct.
- Conect each wire to ESC, Battery, and Motor.
- Must connect sensor cable with SV-D2 and Motor.



- SV-D2 has capacitor cover to hold capacitor. Please follow below step when installing capacitor cover.

- Take capacitor to capacitor cover.
 - ① In case of not using cooling fan, to use 2 short screws.
 - ② In case of using cooling fan, to use 4 long screws.



- ①Using without fan
 - ②Using with Cooling Fan
- ※Holding the capacitor to follow the arrow when taking on capacitor with the capacitor holder.

About SETUP

- Prior to setting up ESC, set up your transmitter as described in the right table.

D/R-TH	THROTTLE · DUAL RATE	HIGH SIDE/BRAKE SIDE	TH 100% / BR 100%
EPA-TH	THROTTLE · END POINT ADJUST	HIGH SIDE	100% H
EPA/TH	THROTTLE · END POINT ADJUST	BRAKE SIDE	100% B/L
EXP-TH	THROTTLE EXPONENTIAL	HIGH SIDE/BRAKE SIDE	OFF / 0%
ARC-TH	THROTTLE · ADJUSTABLE RATE CONTROL	HIGH SIDE/BRAKE SIDE	OFF / 0%
THROTTLE TRIM			CENTER
SUB TRIM-TH	SUBTRIM · THROTTLE		O
THROTTLE REVERSE			NOR or REV It cannot be changed after setup.

- If EPA of your transmitter is set by variable resistance, adjust the maximum value of EPA for throttle High side and Brake side.

※If your transmitter don't have EXP, ARC, etc., adjust the compatible function with the right table.

- Verify that the ESC On/Off switch is turned OFF and the ESC is not plugged into your battery. Remove the pinion gear from motor to prevent any chance of a runaway model during the calibration process. While the throttle trigger in the neutral position, turn your transmitter ON.
- Plug the ESC into battery and while holding the Setup Button, turn the ESC On/Off switch ON. The Setup LED will turn solid green.
- While the throttle trigger in the neutral position, press the Setup Button. The Setup LED will turn solid blue, indicating the throttle neutral position is stored.
- While holding the throttle trigger in the full throttle position, press the Setup Button. The Setup LED will turn solid red, indicating the full throttle position is stored. Release the throttle trigger.
- While holding the throttle trigger in the full brake position, press the Setup Button. The Setup LEDs will turn solid red, blue, and green, indicating the full brake position is stored and the calibration process is complete. Release the throttle trigger.

LED THROTTLE POSITION CONDITION INDICATORS

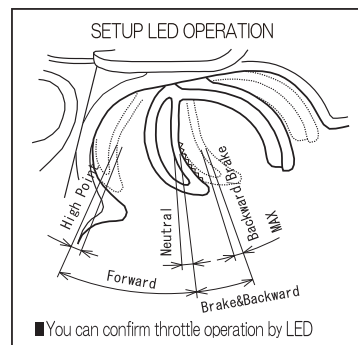
- You can confirm if Setup is correct by the LED indication while operating Throttle.
- ※It's no need to re-setup when changing response of transmitter after the setup for NOR/SHR or SSR/SUR/SXR is complete.

THROTTLE TRIGGER POSITION	LED
NEUTRAL (BOOST OFF)	Flashing Blue
NEUTRAL (BOOST ON)	Solid Blue
NEUTRAL (CODE AUX INVALID)	Flashing Green
NEUTRAL (CODE AUX VALID)	Solid Green
ANY THROTTLE SETTING OTHER THAN FULL (SSR/SUR/SXR)	Flashing Blue Rapidly
ANY THROTTLE SETTING OTHER THAN FULL (NOR/SHR)	Flashing Red Rapidly
ANY THROTTLE SETTING OTHER THAN FULL (SSL/CODE AUX)	Flashing Green Rapidly
FULL THROTTLE	Solid Blue
ANY BRAKE OR REVERSE SETTING OTHER THAN FULL	Flashing Red Rapidly
FULL BRAKE OR FULL REVERSE	Solid Red

※Only in SSL

※Only in SSL

※Only in SSL



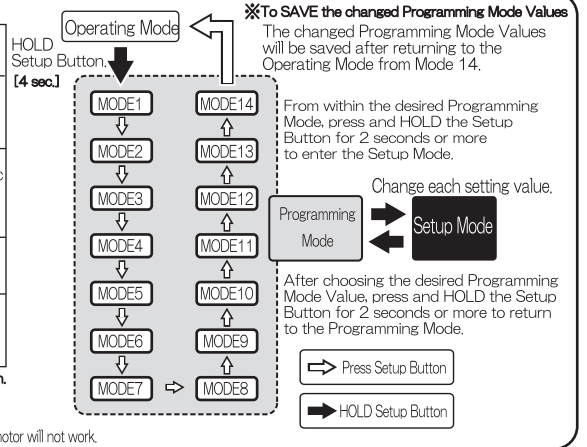
■You can confirm throttle operation by LED

- Power on. Be careful to turn on transmitter prior to turning on ESC. (When turning off, turn off ESC prior to turning off transmitter.)
- When throttle trigger is moved to backward or brake while driving, brake will work according to the operation. When backward movement is valid, your car will move backward if throttle trigger stop at Neutral and move to Brake&Backward side.

PROGRAMMING MODE

●CHANGING MODE

Changing from Operating Mode to Programming Mode	Press and HOLD the Setup Button for 4 seconds or more in Operating Mode. The Setup LEDs will flash, indicating the ESC is in Programming Mode. Release the Setup Button.
Confirm the setting in Programming Mode	In Programming Mode, Blue LED will flash a specific number of times, indicating the current Programming Mode and the Green LED will flash a specific number of times, indicating the current Programming Mode Value within the Programming Mode. (ex.) Mode3/Value#6: Blue LED/Flashing three times/ Green LED/Flashing six times
Changing Programming Mode Values (Setup Mode)	From within the desired Programming Mode, press and HOLD the Setup Button for 2 seconds or more to enter the Setup Mode. The red and green LEDs will both flash a specific number of times, indicating the current Programming Mode Value. Press the Setup Button to choose the desired Programming Mode Value. The Red and green LEDs will flash a specific number of times, indicating the new current Programming Mode Value you chose.
Changing from Setup Mode to Programming Mode	After choosing the desired Programming Mode Value, press and HOLD the Setup Button for 2 seconds or more to return to the Programming Mode.
Saving Programming Mode Values	From within the Programming Mode, press the Setup Button to cycle through the fourteen Programming Modes and return to the Operating Mode. All LEDs will flash indicating you returned to the Operating Mode. The changed Programming Mode Values are saved when returning to the Operating Mode.



!Note! While operating SSL/CODE AUX System, you cannot enter Programming Mode by Holding the Setup button. It will change CODE AUX from Disabled to Enabled

※If you use SSL/CODE AUX function, you can use extended functionality which allows Super Vortex GENERATION 2 to set more detailed values. (Refer to extended functionality of Programming Mode) ※In Programming Mode or Setup Mode, motor will not work.

- Programming Modes and Programming Mode Values. *Default values are shown in gray. Mode 1-4 is for basic setting of ESC and Mode 5-14 is for changing Motor function.

• MODE 1 (Cut-off battery) ※Please set on the cut-off battery for using battery

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
LED flash 1 x	なし (OFF)	3.0v	3.3v	3.6v	4.0v	4.4v	4.8v	5.2v	5.6v	6.0v	6.4v

• MODE 2 (Back Cancel) ※Back operation will be 50% to compare with forward operation.

Setting	#1	#2
LED flash 2 x	Turn on Back Operation	Turn on Back Operation

• MODE 3 (Heat Protect: ESC Temp / Motor Temp) ※Motor temp heat protect is not working in case of not installed temp sensor in motor.

Setting	#1	#2	#3	#4	#5	#6
LED flash 3 x	120C/80C	120C/90C	120C/100C	120C/110C	120C/120C	OFF/OFF

• MODE 4 (Boost) ※In case of setting #1 in neutral position, blue LED is flashing. In case of setting #2 or 3 in neutral position, blue LED is turned on. ※In case only setting #2 (Turn on boost), #10, #11, #12, #13 will work. ※In case only setting #3 (Gimmick), CODE AUX 1 Rev Limiter and Active Throttle will work.

Setting	#1	#2	#3
LED flash 4 x	Turn off boost	Turn on boost	Gimmick

• MODE 5 (Throttle Punch) ※Adjust motor response when start operation.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
LED flash 5 x	0%	4%	7%	11%	14%	16%	19%	22%	24%	26%	28%

• MODE 6 (Neutral Brake Rate) ※Adjust brake in neutral.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
LED flash 6 x	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%

• MODE 7 (Drive Feel) ※Higher setting will be smooth response when turn on throttle. Lower setting will be slower rpm drop when turn off throttle.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
LED flash 7 x	2KHz	4KHz	6KHz	8KHz	10KHz	12KHz	14KHz	16KHz	18KHz	20KHz	22KHz

• MODE 8 (Neutral Brake Feel) ※Higher setting will be smooth brake in neutral.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
LED flash 8 x	NBFO	NBF10	NBF20	NBF30	NBF40	NBF50	NBF60	NBF70	NBF80	NBF90	NBF100

• MODE 9 (Brake Feel) ※Higher setting will be smooth brake.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
LED flash 9 x	BFO	BF10	BF20	BF30	BF40	BF50	BF60	BF70	BF80	BF90	BF100

• MODE 10 (Boost Rate) ※Setting 100% is same as 60° of other manufacture speed controller.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
LED flash 10 x	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

• MODE 11 (Turbo) ※Increase the timing advance at only the full throttle potion by the percentage chosen.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
LED flash 11 x	0%	4%	8%	12%	16%	20%	25%	30%	35%	40%	45%	50%

• MODE 12 (Boost Start) ※Adjust setting of starting potion of RPM at which the Boost Timing become active. If MODE10 is #1, it does not work.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
LED flash 12 x	23,000rpm	21,000rpm	19,000rpm	17,000rpm	15,000rpm	13,000rpm	11,000rpm	9,000rpm	7,000rpm	5,000rpm	3,000rpm

• MODE 13 (Boost Acceleration) ※Increase the amount of boost rate per 1.00 RPM. If the MODE10 is #1, boost does not work.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
LED flash 13 x	0%	2%	4%	6%	8%	10%	12%	14%	16%	18%	20%

• MODE 14 (Neutral Dead-Band) ※Adjust neutral dead band function. #1 is less neutral dead band. #9 is much neutral dead band.

Setting	#1	#2	#3	#4	#5	#6	#7	#8	#9
LED flash 14 x	10	15	20	25	30	35	40	45	50

- Advance Timing of Motor itself should be "Zero". If you use Advance Timing of motor itself, it will damage motor.
- MODE 1 Cut-off voltage is the function to prevent your battery from over discharge. When your battery reached to the cut-off voltage you choose, motor will be stopped. When the motor be stopped, stop driving and replace or charge your battery.
- Set MODE 1-4 according to your use.
- Boost (Timing Advance) or Turbo will become active only when MODE 4 is #2 and MODE 10, MODE 13 is all but #1.
- If the value of Boost Rate or Boost Acceleration is too high, your Motor or ESC will heat up and may be broken. Adjust Boost Rate and Boost Acceleration by increasing the value from low step by step confirming temperature of ESC and Motor.
- Regarding MODE 12 Boost Starting Rate, adjust the values according to your motor and racing circuit. Preferred reference value of Boost Starting Rate is #2 for 4.5T Modified Motor etc., #3-5 for 13.5T Motor, and #6-8 for 17.5T Motor (1/10 EP Touring).
- When you change gear ratio, confirm the temperature of your motor and ESC. Inappropriate gear ratio will damage your motor or ESC.
- Don't hold throttle fully with motor no load. Too much revolution may break your motor or ESC.
- The Setting Data of Super Vortex Gen2 is stored when ESC is turned off. So turn off ESC by ON/OFF Switch after driving, instead of removing the battery connector.
- If setting response mode is higher response mode, the feeling will be more mild. If you want to set same feeling as low response mode to use by high response mode as SXR mode, please set to decrease throttle punch, drive feeling, and brake feeling values.

SV-D2 ABOUT PROGRAM BOX Gen2

- SV-D2 only can set setting values by transmitter SSL system/CODE 10, but also can set setting values by PROGRAM BOX Gen2. In case of using PROGRAM BOX Gen2, SV-D2 is available to update firmware and assign function. Please refer PROGRAM BOX Gen2 manual for more detail.
- *In case of using PROGRAM BOX Gen2 with SV-D2, PROGRAM BOX Gen2 need firmware update.
- *Do not connect anyother device in setting port except PROGRAM BOX Gen2.

PROGRAM BOX Gen2 HOW TO UPDATE FIRMWARE

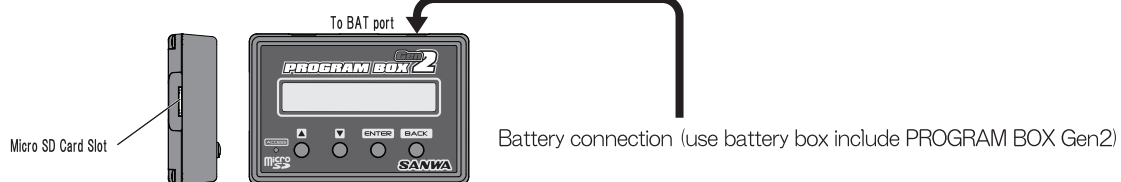
- PROGRAM BOX Gen2(Firmware Ver.01.02R001) cannot use when connected with SV-D2 due to firmware is not compatible. Please update firmware for PROGRAM BOX Gen2.
- In case of not updated firmware, PROGRAM BOX Gen2 require to update.

ESC N:BCK When turn on the PROGRAM BOX to Version Not Same BOX:U01.02R001
CONNECT OK?Y:ENT check "ESC CONNECT OK ?" Please Update!! firmware, display will be U01.04100 as left.

Note After updated firmware, setting date before updated will be default. Please save setting values to Micro SD card in SETTING DATA SAVE(SD) menu before update.

1) Please download firmware "PBOXA001.PRO" from our website and save file to micro SD card. Insert micro SD card to PROGRAM BOX Gen2.

2) Please turn on PROGRAM BOX Gen2 to using with battery box(include).
*In case of decreasing battery voltage, PROGRAM BOX Gen2 cannot work properly.



3) Turn on PROGRAM UPDATE Menu.

<PROGRAM UPDATE> ENTER → <PROGRAM UPDATE> PUSH ENTER KEY → Please Wait.... → Update complete COMPLETE!! Remove PG5 File → After update completed, please turn off and take off the micro SD card. Then, restart.

*Please do not turn off PROGRAM BOX Gen2 during update.

4) After updated firmware, PROGRAM BOX Gen2 can use for SV-D2. After updated firmware, turn on the PROGRAM BOX Gen2 with SV-D2 connection and Menu will be started connect confirmation. Please select the menu for setting.

FUNCTIONS ONLY CAN BE SET BY PROGRAM BOX Gen2

USING PROGRAM BOX Gen2, the below contents can be set.

- DATA11 (Full Brake Rate) [D11 F-BR-R (22)] Setting Range [-100~0] : 0%~100% [Default : 0⇒100%]
Set Brake rate without changing EPA and D/R on transmitters.
- DATA12 (Turbo Slope) [D12 TB-SLP (23)] Setting Range [0~100] 0 is quick, 1%~100% / 0.1sec [Default : 0⇒quick]
Turbo Slope: Set speed of increased advancement angle values when turbo starts. Speed of increased advancement angle is slow when the value sets low. (In case of set as 0, the speed is immediately increased)
- DATA13 (Turbo Release Slope) [D13 TB-REL (24)] Setting Range [0~100]. Value 0 is quick, 1%~100%/0.1 sec [default: 0⇒ Quick]
Turbo Release Slope: Set speed of decreased advancement angle values when turbo finish. Speed of decreased advancement angle is slow when the value sets low. (In case of set as 0, the speed is immediately decreased)
- Date 14 (turbo delay) [D14 TB-REL (25)] setting range [0~100] 0~1.0 sec (0.01 sec each) [default: 0 ⇒ 0 sec]
Turbo delay: Set delay time when throttle is full.

*Turbo do not work in case of full-throttle time is shorter than setting value.

* In case of using function, please upload PROGRAM BOX GEN2 firmware (Ver.01.04100).

SSL ABOUT SSL SYSTEM

●About SSL Systems

Using with compatible transmitters (M17/M12S-RS/M12S/EXZES ZZ/MT-44/MT-S) and receiver (RX-491/RX-482/RX-472/RX-47T) can be read devices information (temperature, RPM, Voltage, etc) and set setting values by transmitters CODE AUX.

●About CODE AUX, CODE10

Using with compatible transmitters (M17/M12S-RS/M12S/EXZES ZZ/MT-44/MT-S) AUX channel (3ch, 4ch) set CODE AUX CODE10 (Only M17/M12S-RS/M12S/EXZES ZZ/MT-44). It can be set compatible device by transmitter.

*Compatible device for CODE10 are (M17/M12S-RS/M12S/EXZES ZZ/MT-44) + (RX-491/RX-482/RX-472/RX-47T) with (SV-D2/SUPER VORTEX Gen2PRO/SUPER VORTEX Gen2/SUPER VORTEX STOCK)
(*RX-491 is only compatible with M17)

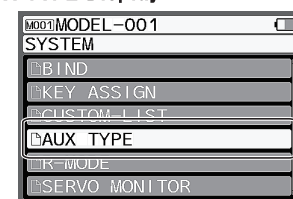
SSL BEFORE USING

- Set AUX TYEP in sytem menu on transmitter (M17/M12S-RS/M12S/EXZES ZZ/MT-44/MT-S). Default setting is AUX1 and AUX2 are [NOR]. Set AUX1 is [CODE10/CODE].

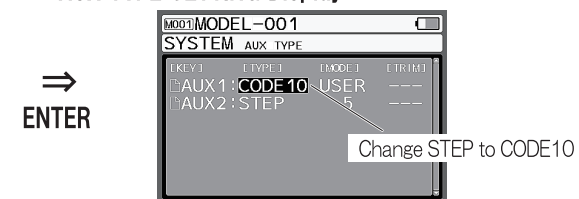
*In case of not setting AUX TYPE, cannot set by the transmitters.

- In case of using M17

AUX TYPE Display

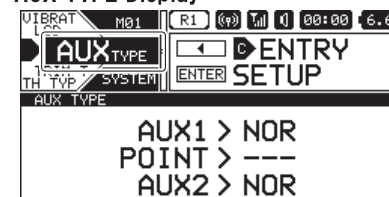


AUX TYPE SETTING Display

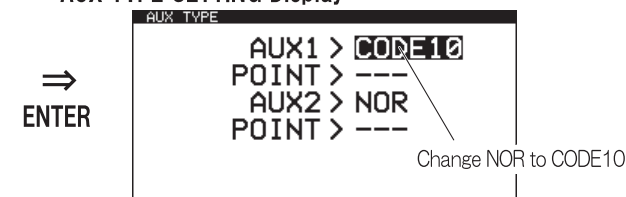


- In case of using M12S-RS, M12S, EXZES ZZ

AUX TYPE Display

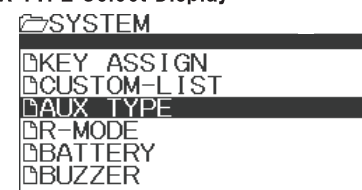


AUX TYPE SETTING Display

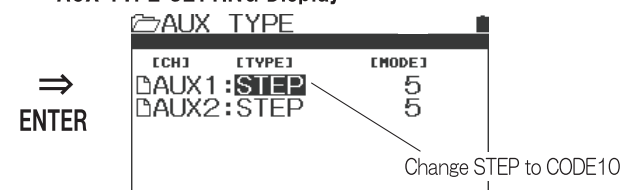


- In case of using MT-44

AUX TYPE Select Display

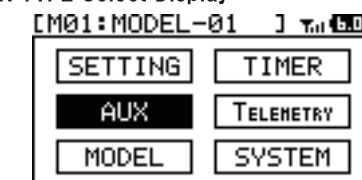


AUX TYPE SETTING Display

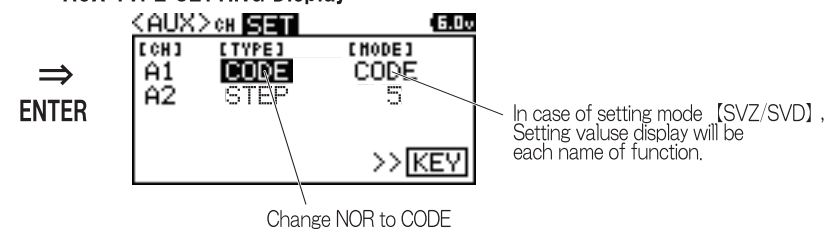


- In case of using MT-S

AUX TYPE Select Display



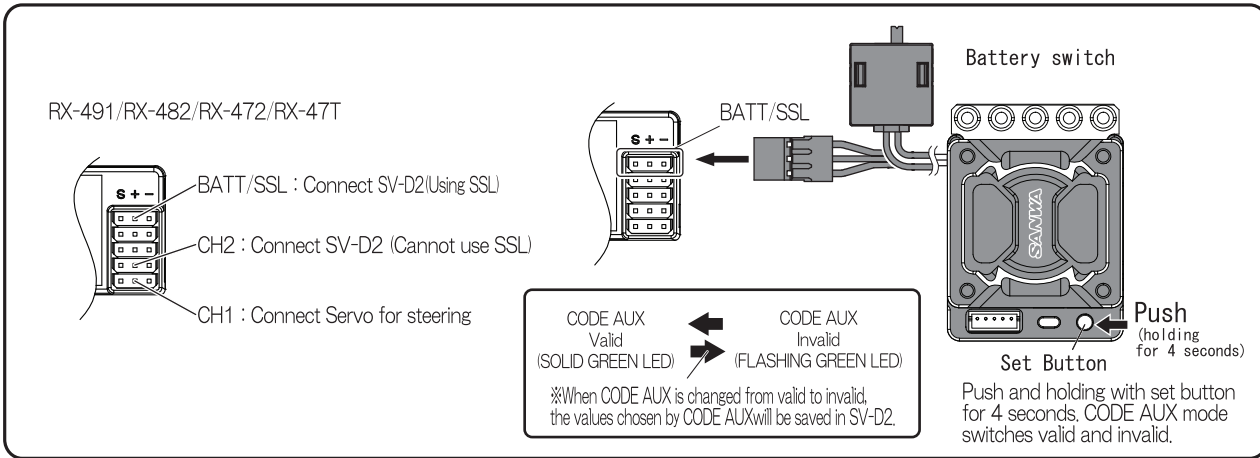
AUX TYPE SETTING Display



Caution In case NOT Compatible with CODE10 transmitters (M12/EXZES Z/MT-4S/MT-S) use with SV-D2, it cannot set all setting contents on AUX1 and AUX2. CODE AUX (M12/EXZES Z/MT-4S/MT-S) can be set MODE5[Throttle Punch]/MODE6[Neutral Brake]/MODE7[Drive Feel]/MODE8[Neutral Brake Feel]/MODE9[Brake Feel].

SSL CONNECTION TO RECEIVER

- Plug the throttle lead of SV-D2 into "BATT/SSL" port of receiver (RX-491/RX-482/RX-472/RX-47T).
- BIND transmitter (M17/M12S-RS/M12S/EXZES ZZ/MT-44/MT-S) with receiver (RX-491/RX-482/RX-472/RX-47T) (*RX-491 is only compatible with M17)
- If within SSL-CODE AUX, SETUP BUTTON of SUPER VORTEX Gen2 is pressed and held for approx. 4 seconds, the programming values chosen by transmitter remote setting will be saved in ESC itself. And SSL-CODE AUX will be invalid (when throttle is neutral, Green LED will be flashing.) If you press and hold the Setup button again, SSL-CODE AUX will be valid (when throttle is neutral, Green LED will be solid).



- When SV-D2 is plugged into BATT/SSL Port, whether CODE AUX is Valid or Invalid, telemetry data such as Motor RPM, ESC temperature, motor temperature (if supported), and battery voltage can be read directly from ESC and displayed on the transmitter.
- When telemetry setting in [BIND] in system menu of M17/M12S-RS/M12S/EXZES ZZ/MT-44 is [ON], even if throttle lead is plugged into 2CH, telemetry data of voltage of receiver will be transferred to transmitter. If you don't want to use telemetry function, change telemetry setting in [BIND] in SYSTEM MENU to "OFF". When used with MT-4S/MT-S, telemetry setting [ON/OFF] can be selected in [TELEMETRY] in SYSTEM Menu.

- * When throttle lead is plugged into BATT/SSL port, if you press and HOLD the ESC Setup button, it will switch a valid/invalid state of CODE AUX, instead of entering Programming Mode.
- * When throttle lead is plugged into BATT/SSL port, response mode will be SSL original response mode, not NOR/SHR/SSR. (Movement response is between SHR and SSR.) If you want to use NOR/SHR/SSR mode, plug the throttle lead into CH2.
- * **Never plug a non-SSL compatible device into the BATT/SSL port in receiver.**

SSL ABOUT CODE AUX1 SETTING

- SSL-CODE AUX allows you to change many programming mode values of SV-D2 directly from transmitter (M17/M12S/EXZES ZZ/MT-44).

Compatible SV-D2 functions to set by CODE AUX

Please set CODE1~CODE10 Setting values in variable situation.

M001 MODEL-001		SYSTEM AUX TYPE	
AUX1	NAME/DEFAULT	EDIT	
CODE01	0	CODE06	0
CODE02	0	CODE07	0
CODE03	0	CODE08	0
CODE04	0	CODE09	0
CODE05	0	CODE10	0

CODE1 → SV-D2 MODE5
 CODE2 → SV-D2 MODE6
 CODE3 → SV-D2 MODE7
 CODE4 → SV-D2 MODE8
 CODE5 → SV-D2 MODE9
 CODE6 → SV-D2 MODE10
 CODE7 → SV-D2 MODE11
 CODE8 → SV-D2 MODE12
 CODE9 → SV-D2 MODE13
 CODE10 → SV-D2 MODE14

In case of M17

SSL ABOUT CODE AUX1 SETTING

送信機機能	対応機能	設定範囲	動作
CODE AUX1 [CODE1]	MODE 5 THROTTLE PUNCH	0~100	It adjusts the punch when motor is started by throttle operation. Higher values increase the strongness of punch. Recommended value for 17.5T stock motor is "60-80"
CODE AUX1 [CODE2]	MODE 6 NEUTRAL BRAKE RATE	0~100	It changes the braking effectiveness as the throttle trigger is returned to neutral. Higher values increase the braking effectiveness.
CODE AUX1 [CODE3]	MODE 7 DRIVE FEEL	0~100	Higher values increase the smoothness of throttle in the forward and return to the neutral directions.
CODE AUX1 [CODE4]	MODE 8 NEUTRAL BRAKE FEEL	0~100	Higher values increase the smoothness of the Neutral Brake Function.
CODE AUX1 [CODE5]	MODE 9 BRAKE FEEL	0~100	Higher values increase the smoothness of throttle in the brake and return to neutral directions.
CODE AUX1 [CODE6]	MODE 10 BOOST RATE	0~100	Higher values increase motor performance throughout the entire throttle range. Too high values can damage ESC or motor by oversurrent or overheat. *If the value is Zero, BOOST and TURBO are invalid.
CODE AUX1 [CODE7]	MODE 11 TURBO	0~50	It increases the Timing Advance at only the full throttle position by percentage chosen. Too high values can damage ESC or motor by overcurrent or overheat.
	MODE 11 REV LIMITER	-1~100	Function is sound as rev limiter working. If setting 「-1」, rev limiter starts when motor RPM reached 11,000rpm. Each -1 value increased each 1,000rpm. If setting value is odd, start will be delay. If setting value is even, start will be faster.
CODE AUX1 [CODE8]	MODE 12 BOOST STARTING	0~100	It adjusts the starting position of RPM at which the Boost Timing becomes active. When the value is "0", boost starts at 23,000rpm. When the value is "100", boost starts at 3,000rpm. Every 200rpm changes according to 1 step. Recommended value for 17.5T stock motor is "80 or around".
	MODE 12 ACTIVE THROTTLE	-1~100	Set increasing motor RPM. Smaller values is less increased motor RPM.
CODE AUX1 [CODE9]	MODE 13 BOOST ACCELERATION	0~100	It increase the amount of boost rate per 1,000rpm. Recommended value for 17.5T stock motor is "45-80", for 13.5T stock motor is "14-45" and for modified motor is "1-8".
	MODE 13 BOOST END	-1~100	Set maximum boost RPM. If setting -1, maximum boost RPM is 1,000rpm. If setting -100, maximum boost RPM is 100,000rpm. Each 1 step in CODE9 is 1,000rpm change.
CODE AUX1 [CODE10]	MODE 14 NEUTRAL DEAD BAND	10~50	It adjusts "Play" (looseness) in neutral range. "10" decrease "Play". And "50" increase "Play". Recommended value for 17.5T stock motor is "25 or less" and for modified motor is "25 or more".

*When using REV LIMITER and ACTIVE THROTTLE function, please set MODE4(BOOST) setting is #3 by program mode.

* In case CODE AUX1/CODE1~CODE10 (on M17/M12S-RS/M12S/EXZES ZZ/MT-44) setting values are "0" and connected BATT/SSL port at receiver (RX-491/RX-472/RX-482/RX-47T), all SV-D2 setting values will be "#1" if the SV-D2 SSL-CODE AUX is valid.

*M12, EXZES Z, MT-4S, MT-S are not compatible with CODE10 function and cannot set all setting values.

The available setting values are MODE 5 [Throttle Punch] / MODE 6 [Neutral Brake Rate] / MODE 7 [Drive Feel] / MODE 8 [Neutral Brake Feel] / MODE 9 [Brake Feel].