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Link do produktu: https://www.nobshop.pl/odbiornik-elrs-pwm-14ch-kanalow-betafpv-24ghz-p-4896.html

Odbiornik ELRS PWM 14ch kanałów BetaFPV 2.4GHz

Cena brutto	**148,99 zł**
Cena netto	**121,13 zł**
Dostępność	**Dostępny**
Czas wysyłki	**1 - 3 dni**
Producent	**BetaFPV**

Opis produktu

Odbiornik ELRS PWM 14ch kanałów BetaFPV 2.4GHz

Being the first to market! SuperP 14CH Diversity Receiver has been designed not only for long-range flying, aerial photography but also suitable for the application of fixed-wing, helicopters, RC cars, boats and etc. It has TCXO oscillator, two antennas, dual receiver chains, and Plug-N-Play ports, and adds more features, which support 14 channels for the external barometer, RGB light strip, and other external sensors that are currently under development. It offers 2.4GHz, 915MHz and 868MHz versions, and greatly fulfills the requirements of reliability for long-range flying, aerial photography, or FPV freestyle tricks. With this receiver, users are able to get a more stable and reliable experience on RC models.

A ton of ExpressLRS items are available now!

Bullet Points

- Featuring 14 PWM channels, this receiver is suitable for different applications. It can drive up to 14 servos, allowing for more complex and precise control. In addition, an external sensor such as a barometer, current sensor, etc, is also supported.
- A true diversity receiver with two complete RF receiver chains (referring to dual SX1280/SX1281 or dual SX1276), based on the latest official ExprssLRS. It comes with ExpressLRS V3.3 firmware.
- Built in a TCXO (temperature-compensated crystal oscillator), it is shared by two RF chips for a super accurate clock source. It can withstand extreme temperatures with no fear of heat and cold, continuously outputting accurate frequency for long-range flight.
- Two antennas will create an omnidirectional signal for good signal transmission. Placing the antenna separately and vertically to get a better signal is recommended.
- With the support of the failsafe function, it is capable of protecting RC models from being out of control.
- Reserving a Type-C USB port, it is convenient for pilots to flash the firmware. The plug-and-play design makes it very easy and friendly to use.
- The 900MHz radio system exhibits greater diffraction ability due to its lower frequency, while the 2.4GHz systems tend to be directional and susceptible to attenuation caused by buildings, foliage, or moisture.

Specification

- Item: BETAFPV SuperP 14CH Diversity Receiver | ELRS 2.4GHz/915MHz/868MHz
- MCU: ESP32 Pico D4 + 2*SX1280/SX1281 + 2*AT2401C (2.4GHz)
- MCU: ESP32 Pico D4 + 2*SX1276□915MHz/868MHz□
- Telemetry Power: 20dBm/100mW (2.4GHz), 17dBm/50mW (915MHz/868MHz)
- Frequency Bands: 2.4GHz ISM, 915MHz FCC/868M EU
- Rated Current: 180mA@5V (2.4GHz), 140mA@5V (915MHz/868MHz)
- Weight: 15.5g (2.4GHz), 15.8g (915MHz/868MHz)
- Default Firmware Version: ExpressLRS V3.3.0
- Serial Output Protocol: PWM, CRSF or SBUS
- Antenna: 2* IPEX MHF 1 Antenna

- Size: 46.9mm*32.7mm*14.6mm
- Voltage Detector Range: 1~6S
- Input Voltage: 3.5V~8.4V DC
- PWM Channel: 14 Channels
- Adapted RC Model Type: Multirotors, Fixed-wing aircraft, Helicopters, RC Cars, RC Boats and etc.

Iterate Upgrading Quickly

Based on BETAFPV SuperD True Diversity Receiver and Micro Receiver, the SuperP 14CH Diversity Receiver takes the good features of them. For example, 14 PWM channels, two antennas, dual receiver chains, TCXO oscillator, etc. Besides, it has an I2C serial port for more external sensors such as a barometer, and a 3-pin port is reserved for RGB light strip. With the combination of the good points, SuperP RX ensures stability and reliability for users.

	SuperP RX	Micro RX	SuperD RX
Weight	15.5g (2.4GHz), 15.8g (915/868MHz)	3.5g(2.4GHz)	1.1g (2.4GHz), 1.2g (915/868MHz)
Antenna	IPEX MHF 1 Antenna	IPEX MHF1 + T antenna	IPEX MHF1 + T antenna
PWM Channel	14 CH	5 CH	-
Frequency	2.4GHz ISM, 915MHz (FCC), 868MHz (EU)	2.4GHz ISM	2.4GHz ISM, 915MHz (FCC), 868MHz (EU)
Telemetry Power	100mW(2.4GHz), 50mW(915/868MHz)	17mW(2.4GHz)	100mW(2.4GHz), 50mW(915/868MHz)
Serial Protocol	PWM, CRSF or SBUS	PWM, CRSF	CRSF
Input Voltage	3.5~8.4V	5~9V	5V
Battery Voltage Detector	1-6S	1-6S	-
Supported Device	Barometer(SPL06)	-	-
Model Type	Fixed-wing aircraft, Helicopter, RC Cars, RC Boats	Fixed-wing aircraft, Helicopter, RC Cars, RC Boats	FPV Drone, Fixed-wing aircraft

Compatible Models

The ExpressLRS receiver protocol can be widely used for more models such as multi-rotors, fixed-wing planes, helicopters, RC cars, RC Boats and etc. The two antennas and dual receiver chains design greatly fulfill the requirements for long-range flying and aerial photography.

It is recommended to place the antenna separately and vertically as far as possible for a better signal.

Know More About the TCXO

SuperP 14CH Diversity Receiver is built-in a TCXO (temperature compensated crystal oscillator), which is shared by two RF chips for a super accurate clock source. The true diversity receiver including two RF chips and PA+LNA will generate a large amount of heat when working. With the high-quality TCXO, it can withstand extreme temperatures with no fear of heat and cold, continuously outputting accurate frequency for long-range flight. Click to learn more about the TCXO.

Diagram

The diagram for SuperP 14CH Diversity Receiver is below.

RGB status indication for SuperP 14CH Diversity Receiver is shown below.

RGB Color	Status	Description
Rainbow	Fade effect	Power on
Green	Slow flash	WIFI upgrading mode
Red	Quick flash	No RF chip detected
Orange	Double flash	Binding mode

Orange	Triple flash	Connected, but mismatched model-match configuration
Orange	Slow flash	Waiting for connection
	Solid on	Connected and color indicates packet rate

The below picture shows the RGB light color for the 2.4GHz version corresponding to the packet rate.

The below picture shows the RGB light color for the 915MHz and 868MHz versions corresponding to the packet rate.

Note: F1000 and F500 are packet rates in FLRC mode, providing faster modulation and lower latency, but at the same time having shorter reception distance than normal Lora mode. This mode is great for racers.

D500 and D250 are packet rates in DVDA (Deja Vu Diversity Aid) mode. This mode works at the F1000 data packet rate of FLRC mode, providing better link connection in the case of complex interference by sending the same data packet multiple times. D500 and D250 indicate that the same data packet is sent twice and four times respectively.

D50 is an exclusive mode under ELRS 900M. It will send packets four times repeatedly under 200Hz Lora Mode. Its receiving distance is equivalent to 200Hz.

100Hz Full is the mode that can achieve 16-channel full resolution output at the 200Hz packet rates of Lora mode. Its receiving distance is equivalent to 200Hz.

Port Configuration

Enter the configuration page via WiFi mode.

- Power on the receiver and wait for 60 seconds without binding to any transmitted equipment;
- Once the RGB indicator is in slow green flashing, the receiver's WiFi has been activated;
- Connect WiFi via cellphone or PC (WiFi name: ExpressLRS RX, password: expresslrs) ;
- Open the website address: http://10.0.0.1/hardware.html

On the configuration page, users can set the PWM pin, CRSF pin, I2C pin, etc. The pin number corresponds to specified channels. You can refer to the chip I/O function table.

Note: Please do not modify other function pins.

Pin	13	15	2	0	4	9	10	5
Main	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
Second								
Pin	18	23	19	22	3	1	21	36
Main	CH9	CH10	CH11	CH12	CH13	CH14	RGB	VBAT
Second			SCL	SDA	RX	TX		
Third						SBUS		

Note: VBAT is the battery voltage detection port, which supports 1~6S battery voltage detection.

When the RX is configured to use CRSF output, CH13 becomes RX and CH14 becomes TX.

When the RX is configured to use SBUS output, CH13 has no output, and CH14 becomes SBUS.

The CH11 and CH12 of the receiver have been configured as I2C serial ports by factory default. At this time, CH13 becomes CH11, and CH14 becomes CH12.

Binding Procedure

The default firmware of the SuperP 14CH Diversity Receiver uses the ExpressLRS V3.3.0 protocol and has no preset binding phrase. Therefore, the firmware version of the transmitter module must be ExpressLRS V3.0.0 or later versions. Both the receiver and transmitter module should not have any binding phrase.

- Power on and off the receiver 3 times, each step pausing 2 seconds to enter binding mode;
- When the indicator starts fast blink with orange twice, the receiving is at binding mode;
- Enter the radio or transmitter module's binding mode to bind with the receiver; if the Indicator has turned solid, it

indicates that the device has been bound successfully.

Note: After the device has been successfully bound, the receiver will record the device, and future binding will be automatic. There would be no need to go through the binding process again.

Failsafe and Channel Output Settings

The setting method is as follows:

- After the receiver is powered on, wait for 60 seconds without connecting the remote control
- The RGB indicator enters the green slow flashing state, and the receiver automatically turns on WiFi (WiFi name: ExpressLRS RX, WiFi password: ExpressLRS)
- Use a mobile phone or computer to connect to WiFi, and log in to http://10.0.0.1 with a browser to find the model page

Failsafe settings are as follows: The output value of the servo can be obtained when the out-of-control protection value is inputted and the system goes out of control.

Channel output settings are as follows: Select the desired mode from the dropdown menu of the mode, and the following are descriptions of all output modes.

- 50-400Hz: output PWM signal frequency
- 10KHzDuty: used to directly drive micro-motors
- ON/OFF: output high-level or low level
- Serial TX/RX: Serial communication port

I2C/CRSF/SBUS output settings are specified below:

- I2C output: set channel 11 to I2C SCL and set channel 12 to I2C SDA
- CRSF/SBUS output: set channel 13 to serial RX or set channel 14 to Serial TX
- Select the serial port protocol in Serial Protocol, and click "SAVE" to save the settings. (Supported Serial Protocol: CRSF, SBUS, SUMD, DJI RS Pro, HoTT Telemetry)
- Set the baud rate on the options page (the SBUS serial protocol cannot set the baud rate)
- Click "SAVE&REBOOT" to complete the setting of the CRSF/SBUS output

Note: When the receiver is configured to use CRSF output, CH13 becomes RX and CH14 becomes TX; When the receiver is configured to use SBUS output, CH13 has no output, and CH14 becomes SBUS.

BETAFPV ExpressLRS Series

ExpressLRS is an open-source RC link for RC applications. Everyone could find this project on Github or join the discussion in the Facebook Group. Choosing a suitable receiver to fly quadcopter or other RC models is very important. BETAFPV ExpressLRS Receivers greatly fulfill pilots' requirements for FPV flying.

Know More About ExpressLRS

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FAQ

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