**Подключение периферии микроконтроллера на стенде ЭГУРМ**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Функционал | Периферия | Периферия микроконтроллера | Порт | Ножка микрокон-троллера | Примеча-ние |
| 1 | Revers | PORT | GPIO\_OUT | PB14 | (35) | Default |
| 2 | Uпит | ADC | ADC0\_IN10 | PC0 | (8) | Alternat 2 |
| 3 | Curent | ADC | ADC0\_IN11 | PC1 | (9) | Alternat 2 |
| 4 | PWM\_Mufta | TIM\_CHx | TIMER4\_CH1 | PA1 | (15) | Alternat 2 |
| 5 | CAN\_Rx | CAN\_Rx | CAN1\_Rx | PB12 | (33) | Alternat 2 |
| 6 | CAN\_Tx | CAN\_Tx | CAN1\_Tx | PB13 | (34) | Alternat 2 |
| 7 | USB\_DM | USBDM | USBDM | PA11 | (44) | Alternat 2 |
| 8 | USB\_DP | USBDP | USBDP | PA12 | (45) | Alternat 2 |
| 9 | ENC\_A (IN) | TIM\_CH0 | TIMER2\_CH0 | PB4 | (56) | Remap |
| 10 | ENC\_B (IN) | TIM\_CH1 | TIMER2\_CH1 | PB5 | (57) | Remap |
| 11 | ENC\_R (IN) | TIM\_CHx | TIMER9\_CH0 | PB8 | (61) | Alternat 2 |
| 12 | Moment (IN) | ADC | ADC0\_IN12 | PC2 | (10) | Alternat 2 |
| 13 | ENC\_A (OUT) | TIM\_CH0 | TIMER3\_CH0 | PB6 | (58) | Alternat 2 |
| 14 | ENC\_B (OUT) | TIM\_CH1 | TIMER3\_CH1 | PB7 | (59) | Alternat 2 |
| 15 | ENC\_R (OUT) | TIM\_CHx | TIMER10\_CH0 | PB9 | (62) | Alternat 2 |
| 16 | Moment (OUT) | ADC | ADC0\_IN13 | PC3 | (11) | Alternat 2 |
| 17 | АКИП-1148А-80-120 (RS232\_Tx) | USART\_Tx | USART2\_Tx | PB10 | (29) | Alternat 2 |
| 18 | АКИП-1148А-80-120 (RS323\_Rx) | USART\_Rx | USART2\_Rx | PB11 | (30) | Alternat 2 |
| 19 | MP-J2S-700A (RS232\_Tx) | USART\_Tx | USART1\_Tx | PA2 | (16) | Alternat 2 |
| 20 | MP-J2S-700A (RS323\_Rx) | USART\_Rx | USART1\_Rx | PA3 | (17) | Alternat 2 |
| 21 | SWDIO | SWDIO | SWDIO | PA13 | (46) | Default |
| 22 | SWCLK | SWCLK | SWCLK | PA14 | (49) | Default |
| 23 | Зажигание | PORT | GPIO\_OUT | PB15 | (36) | Default |
| 24 | Период 10 мкс | TIMx | TIMER5 | --- | --- |  |
| 25 | Период 100 мкс | TIMx | TIMER6 | --- | --- |  |
| 26 | ADC0\_DMA | DMAx | DMA0\_CH0 | --- | --- |  |
| 27 | USART2\_Tx\_DMA | DMAx | DMA0\_CH1 | --- | --- | АКИП-1148А |
| 28 | USART2\_Rx\_DMA | DMAx | DMA0\_CH2 | --- | --- | АКИП-1148А |
| 29 | Датчик температуры | ADC | ADC0\_IN14 | PC4 | (24) | Alternat 2 |
| 30 | USART1\_Tx\_DMA | DMAx | DMA0\_CH6 | --- | --- | MP-J2S-700A |
| 31 | USART1\_Rx\_DMA | DMAx | DMA0\_CH5 | --- | --- | MP-J2S-700A |
| 32 | CAN – GD32 (RS232\_Tx) | USART\_Tx | UART3\_Tx | PC10 | (51) | Alternat 2 |
| 33 | CAN – GD32 (RS323\_Rx) | USART\_Rx | UART3\_Rx | PC11 | (52) | Alternat 2 |
| 34 | Период 200 мкс  для MP-J2S-700A | TIMx | TIMER8 | --- | --- |  |
| 35 | UART3\_Tx\_DMA | DMAx | DMA1\_CH4 | --- | --- | UART-CAN |
| 36 | UART3\_Rx\_DMA | DMAx | DMA1\_CH2 | --- | --- | UART-CAN |
|  | Период 200 мкс  для Муфты | TIMx | TIMER11 | --- | --- |  |
|  |  |  |  |  |  |  |

TIMERx – 0, 1, ~~2~~, ~~3~~, ~~4~~, ~~5~~, ~~6~~, 7, ~~8~~, ~~9~~, ~~10~~, 11, 12, 13

USARTx – 0, ~~1~~, ~~2~~, 5 UARTx – ~~3~~, 4

ADC0\_INx – 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ~~10~~, ~~11~~, ~~12~~, ~~13~~, ~~14~~, 15

DMA0\_CHx – ~~0~~, ~~1~~, ~~2~~, 3, 4, ~~5~~, ~~6~~