

| Цепь | Комп. |
|-----------------|-------|
| 3V3_P1 | 1 |
| PSV | 2 |
| GPIO 2 (SDA) | 3 |
| PSV | 4 |
| GPIO 3 (SCL) | 5 |
| GND | 6 |
| GPIO 4 (PCMD0) | 7 |
| GPIO 14 (TXD) | 8 |
| GND | 9 |
| GPIO 15 (RXD) | 10 |
| GPIO 17 | 11 |
| GPIO 18 (PCMD1) | 12 |
| GPIO 21 | 13 |
| GND | 14 |
| GPIO 22 | 15 |
| GPIO 23 | 16 |
| 3V3_P1 | 17 |
| GPIO 24 | 18 |
| GPIO 10 (MISO) | 19 |
| GND | 20 |

| Цепь | Комп. |
|-----------------|-------|
| GPIO 9 (MOSI) | 21 |
| GPIO 25 | 22 |
| GPIO 11 (SCLK) | 23 |
| GPIO 8 (CS0) | 24 |
| GND | 25 |
| GPIO 7 (CS1) | 26 |
| GPIO 0 (IO_S0) | 27 |
| GPIO 1 (IO_S1) | 28 |
| GPIO 5 | 29 |
| GND | 30 |
| GPIO 6 | 31 |
| GPIO 12 (PWM0) | 32 |
| GPIO 13 (PWM1) | 33 |
| GND | 34 |
| GPIO 19 (PCMD3) | 35 |
| GPIO 16 | 36 |
| GPIO 26 | 37 |
| GPIO 20 (PCMD0) | 38 |
| GND | 39 |
| GPIO 21 (PCMD1) | 40 |

| Цепь | Комп. |
|-----------------|-------|
| -5_B | 1 |
| GND | 2 |
| -3.3_B | 3 |
| GND | 4 |
| IO_C_SDA | 5 |
| IO_C_SCL | 6 |
| TIMER_RESERVED1 | 7 |
| TIMER_RESERVED2 | 8 |
| TIMER_RESERVED3 | 9 |
| TIMER_RESERVED4 | 10 |
| 3V3_P1 | 11 |
| EXT_TO_A0C | 12 |
| AGND | 13 |
| SPL_MISO | 14 |
| SPL_MOSI | 15 |
| SPL_SCLK | 16 |
| CS2 | 17 |
| GND | 18 |
| CAN_H | 19 |
| CAN_L | 20 |
| UART2_TX | 21 |
| UART2_RX | 22 |
| RPL_PWM0 | 23 |
| RPL_PWM1 | 24 |
| RPL_PWM2 | 25 |
| RPL_PWM3 | 26 |
| RPL_PWM4 | 27 |
| RPL_PWM5 | 28 |
| RPL_PWM6 | 29 |
| RPL_PWM7 | 30 |

| Цепь | Комп. |
|----------|-------|
| -5_B | 1 |
| GND | 2 |
| IO_C_SDA | 3 |
| IO_C_SCL | 4 |
| SWDIO | 5 |
| SWCLK | 6 |

| Цепь | Комп. |
|-----------|-------|
| VCC | 1 |
| GND | 2 |
| HALL_A_M1 | 3 |
| HALL_B_M1 | 4 |
| PSV | 5 |
| GND | 6 |
| HALL_A_M2 | 7 |
| HALL_B_M2 | 8 |

| Цепь | Комп. |
|------|-------|
| VCC | 1 |
| GND | 2 |
| SCL | 3 |
| SDA | 4 |
| S0D0 | 5 |
| CS2 | 6 |
| INT1 | 7 |
| INT2 | 8 |

| Цепь | Комп. |
|-----------|-------|
| VCC | 1 |
| GND | 2 |
| HALL_A_M1 | 3 |
| HALL_B_M1 | 4 |
| PSV | 5 |
| GND | 6 |
| HALL_A_M2 | 7 |
| HALL_B_M2 | 8 |

| Цепь | Комп. |
|------|-------|
| VCC | 1 |
| GND | 2 |
| SCL | 3 |
| SDA | 4 |
| S0D0 | 5 |
| CS2 | 6 |
| INT1 | 7 |
| INT2 | 8 |

| Цепь | Комп. |
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| VCC | 1 |
| GND | 2 |
| HALL_A_M1 | 3 |
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| PSV | 5 |
| GND | 6 |
| HALL_A_M2 | 7 |
| HALL_B_M2 | 8 |

| Цепь | Комп. |
|------|-------|
| VCC | 1 |
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| SCL | 3 |
| SDA | 4 |
| S0D0 | 5 |
| CS2 | 6 |
| INT1 | 7 |
| INT2 | 8 |

| Цепь | Комп. |
|-----------|-------|
| VCC | 1 |
| GND | 2 |
| HALL_A_M1 | 3 |
| HALL_B_M1 | 4 |
| PSV | 5 |
| GND | 6 |
| HALL_A_M2 | 7 |
| HALL_B_M2 | 8 |

| Цепь | Комп. |
|------|-------|
| VCC | 1 |
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| SCL | 3 |
| SDA | 4 |
| S0D0 | 5 |
| CS2 | 6 |
| INT1 | 7 |
| INT2 | 8 |

| Цепь | Комп. |
|-----------|-------|
| VCC | 1 |
| GND | 2 |
| HALL_A_M1 | 3 |
| HALL_B_M1 | 4 |
| PSV | 5 |
| GND | 6 |
| HALL_A_M2 | 7 |
| HALL_B_M2 | 8 |

| Цепь | Комп. |
|------|-------|
| VCC | 1 |
| GND | 2 |
| SCL | 3 |
| SDA | 4 |
| S0D0 | 5 |
| CS2 | 6 |
| INT1 | 7 |
| INT2 | 8 |

| Цепь | Комп. |
|-----------|-------|
| VCC | 1 |
| GND | 2 |
| HALL_A_M1 | 3 |
| HALL_B_M1 | 4 |
| PSV | 5 |
| GND | 6 |
| HALL_A_M2 | 7 |
| HALL_B_M2 | 8 |

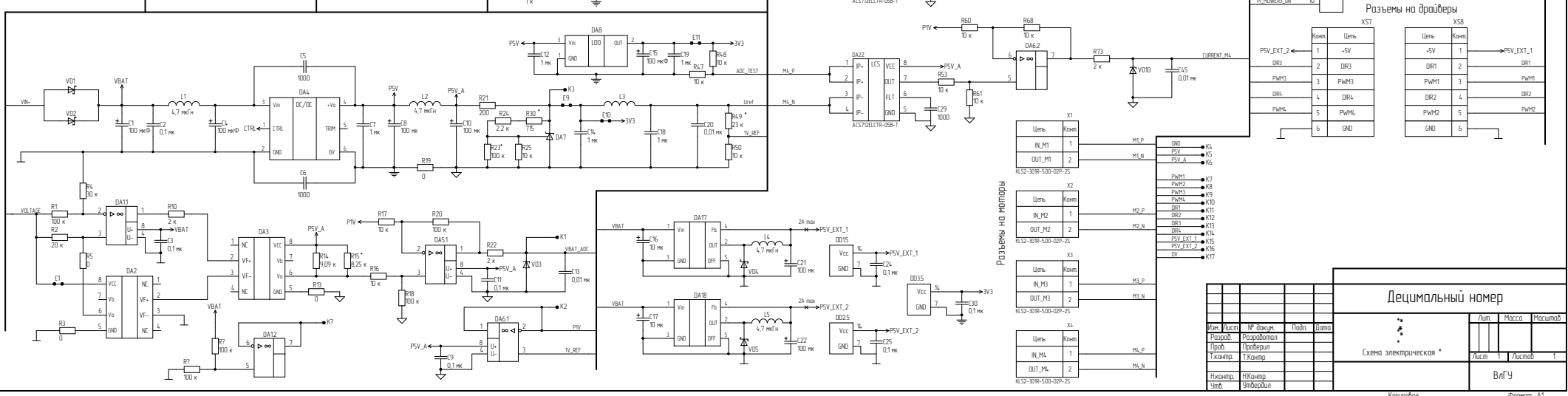
| Цепь | Комп. |
|------|-------|
| VCC | 1 |
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| SCL | 3 |
| SDA | 4 |
| S0D0 | 5 |
| CS2 | 6 |
| INT1 | 7 |
| INT2 | 8 |

| Цепь | Комп. |
|-----------|-------|
| VCC | 1 |
| GND | 2 |
| HALL_A_M1 | 3 |
| HALL_B_M1 | 4 |
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| GND | 6 |
| HALL_A_M2 | 7 |
| HALL_B_M2 | 8 |

| Цепь | Комп. |
|------|-------|
| VCC | 1 |
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| SCL | 3 |
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| S0D0 | 5 |
| CS2 | 6 |
| INT1 | 7 |
| INT2 | 8 |

| Цепь | Комп. |
|-----------|-------|
| VCC | 1 |
| GND | 2 |
| HALL_A_M1 | 3 |
| HALL_B_M1 | 4 |
| PSV | 5 |
| GND | 6 |
| HALL_A_M2 | 7 |
| HALL_B_M2 | 8 |

| Цепь | Комп. |
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| VCC | 1 |
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| SCL | 3 |
| SDA | 4 |
| S0D0 | 5 |
| CS2 | 6 |
| INT1 | 7 |
| INT2 | 8 |



Децимальный номер

Схема электрическая *

Лист Масса Масштаб

Лист 1 Листов 1

ВЛЧ

Копирол

Формат А1

| Comment | Description | Designator | Footprint | LibRef | Quantity |
|------------------------|---|---|-----------------------|--|----------|
| Value | | BQ1 | HC-495 | HC-495_8MHz | 1 |
| Value | | BQ2 | 32768SMD | 32768Hz | 1 |
| 100 мкФ | Конденсатор электролитический алюминиевый | C1, C4 | Capacitor10x20 | JRB2A101M0500100020 00008 | 2 |
| 0,1 мк | Конденсатор керамический 0,1 мкФ 100 В | C2, C3, C9, C11, C23, C24, C25, C30, C31, C32, C33, C36, C37, C40, C48, C49, C51 | C1206 | 0,1 мкФ X7R 100В 10% 1206 | 17 |
| 1000 | Конденсатор 1000нФ Конденсатор 1000нФ 50 В Конденсатор 1000нФ 50 В Конденсатор 1000нФ 50 В Конденсатор 1000нФ 50 В Конденсатор 1000нФ 50 В | C5, C6, C26, C27, C28, C29, C50 | C1206 | GRM31BR73A102K, GRM31BR73A102K, 1000нФ X7R 50В 10%, 1206, 1000нФ X7R 50В 10%, 1206, 1000нФ X7R 50В 10%, 1206, 1000нФ X7R 50В 10%, 1206, 1000нФ X7R 50В 10%, 1206 | 7 |
| 1 мк | Конденсатор 1 мкФ 16 В | C7, C12, C14, C18, C19 | C0805 | 1 мкФ X7R 16В 10% 0805 | 5 |
| 100 мк | Конденсатор танталовый 100 мкФ | C8, C10, C21, C22 | Case C | TECAP100/10VC | 4 |
| 12061C103MAT | Конденсатор | C13, C20, C41, C42, C43, C44, C45, C47 | C1206 | 12061C103MAT | 8 |
| 100 мкФ | Конденсатор танталовый 100 мкФ | C15 | Case C | TECAP100/10VC, 10% | 1 |
| 10 мк | Конденсатор танталовый 10 мкФ | C16, C17 | Case C | TECAP10/35VC | 2 |
| GRM1885C1H220JA01D | Конденсатор | C34, C35 | C0603 | GRM1885C1H220JA01D | 2 |
| GRM1885C1H120JA01D | Конденсатор | C38, C39 | C0603 | GRM1885C1H120JA01D | 2 |
| C0805C475K4RAC | Конденсатор | C46 | C0805 | C0805C475K4RAC | 1 |
| LM358ADR | Операционный усилитель | DA1 | SOIC-8 | LM358ADR | 1 |
| 6N136 | Оптопара транзисторная 6N136 | DA2, DA3, DA9, DA10, DA11, DA12, DA13, DA14, DA15, DA16, DA25, DA26, DA27 | 6N136 | 6N136 | 13 |
| Part Number | DC/DC преобразователь | DA4 | URB_LD_20WR3 | DC-DC URB240SLD-20WR3 | 1 |
| OPA-2-8p | Источник опорного напряжения | DA7 | SOIC-8 | LMV358DR | 5 |
| ManufacturerPartNumber | Стабилизатор напряжения | DA7 | SOT-23-3 | TL431IDBZR-215 | 1 |
| ManufacturerPartNumber | Стабилизатор напряжения | DA8 | SOT-223-3 | AMS1117-3.3 | 1 |
| LM25765-5.0 | Интегральный стабилизатор напряжения | DA17, DA18 | TO-263-5 | LM25765-5.0 | 2 |
| ACS712ELCTR-05B-T | Датчик тока | DA19, DA20, DA21, DA22, DA28 | SOIC-8 | ACS712ELCTR-05B-T | 5 |
| ManufacturerPartNumber | 5pin H4KC00 Quadripole 2-Input NAND Gates | DD1, DD2, DD3 | SOIC-14 | SN74HC00D | 3 |
| Микроконтроллер | STM32F303R8T6 | DD4 | LQFP-64 | STM32F303R8T6 | 1 |
| MCP2551 | Высокоскоростной CAN-Трансивер, 1Mbit/s, 12В/24В, до 112 узлов | DD5 | SOIC-8 | MCP2551 | 1 |
| 74LVC4245APW,118 | Преобразователь уровней 5В-3,3В | DD6 | TSSOP-24 | 74LVC4245APW,118 | 1 |
| ManufacturerPartNumber | Переключатель | E1, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11 | E2 | Переключатель | 11 |
| KP-2012SURCK | | HL1 | LD0805 | KP-2012SURCK | 1 |
| KP-2012SGC | | HL2 | LD0805 | KP-2012SGC | 1 |
| KP-2012YCK | | HL3, HL4 | LD0805 | KP-2012YCK | 2 |
| | Контрольная точка | K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K12, K13, K14, K15, K16, K17, K7 | X,1,0-2,0 | Контрольная точка | 18 |
| 4,7 мкГн | Дроссель | L1, L2, L4, L5 | BB247206472M000 | BB247206472M000 | 4 |
| 18 мГн | Дроссель | L3 | R0803 | BLM18HG1025N1D | 1 |
| 100 к | Резистор | R1, R18, R20, R75, R76, R77, R7, R7 | R1206 | RC1206FR-07100KL | 8 |
| 20 к | Резистор | R2 | C2-29B-0.062 | C2-29B-0.062-280 кОм±0.1%-1.0-A | 1 |
| 0 | Резистор | R3, R5, R13, R19 | R1206 | RC1206JR-070RL | 4 |
| 30 к | Резистор | R4 | R1206 | RC1206FR-07100KL | 1 |
| 1 к | Резистор | R6, R7, R8, R9, R26, R27, R28, R29, R31, R32, R33, R34, R35, R36, R37, R38, R78, R79, R80, R90, R91, R92 | R1206 | 0.25В±1206 1 кОм, 1% | 22 |
| 2 к | Резистор | R10, R22, R49, R70, R71, R72, R73, R74 | R1206 | RC1206FR-072KL | 8 |
| 150 | Резистор | R11, R12, R83, R84 | R1206 | RC1206JR-07150RL | 4 |
| 9.09 к | Резистор | R14 | C2-29B-0.062 | C2-29B-0.062-280 кОм±0.1%-1.0-A | 1 |
| 8,25 к | Резистор | R15 | C2-29B-0.062 | C2-29B-0.062-280 кОм±0.1%-1.0-A | 1 |
| 10 к | Резистор | R16, R17, R25, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R82, R85, R86, R87, R88, R89 | R1206 | 0.25В±1206 10 кОм, 1% | 39 |
| 200 | Резистор | R21 | R1206 | P1-12-0.25-200 Ом ± 5 % - M | 1 |
| 100 к | Резистор | R23 | C2-29B-0.125(1) | C2-29B-0.125-100 кОм ± 0.05 %-1.0-A | 1 |
| 2,2 к | Резистор | R24 | R1206 | P1-12-0.25-2.2 кОм ± 5 % - M | 1 |
| 715 | Резистор | R30 | C2-29B-0.125(1) | C2-29B-0.125-100 кОм ± 0.05 %-1.0-A | 1 |
| 23 к | Резистор | R49 | C2-29B-0.062 | C2-29B-0.062-3.16 кОм ± 0.25 %-1.0-A | 1 |
| 120 | Резистор | R93 | C2-29B-0.062 | C2-29B-0.062-280 кОм±0.1%-1.0-A | 1 |
| 4,7 к | Резистор | R94, R95 | R0805 | 0805 4.7kОм ±5% 0.125Вт | 2 |
| TS-A3P5-130 | | S81, S82 | TS-A3P5 | TS-A3P5-130 | 2 |
| Value | Диод Шоттки | VD1, VD2, VD4, VD5, VD12, VD13, VD14, VD15, VD16, VD17, VD18, VD9, VD10, VD11 | DO-214AC | B340A | 10 |
| Suppressor | | VT1, VT2, VT3 | SOT-23-3 | BZX84-C3V3 | 7 |
| IRFR024NTR | N-channel MOSFET | VT1, VT2, VT3 | DPAK | IRFR024NTR | 3 |
| KL52-301R-5.00-02P-2S | Соединитель | X1, X2, X3, X4 | KL52-301R-5.00-02P-2S | KL52-301R-5.00-02P-2S | 4 |
| IDC-08MR | Вилка | XPT, XP2 | SAMTEC_TST-104-04-T-D | IDC-08MR | 2 |
| IDC-06MR | Вилка | XP3 | IDC-06MR | IDC-06MR | 1 |
| PBD-40 | Розетка | XS1 | BP48 | PBD-40 | 1 |
| PBD-30 | Розетка | XS2 | PBD-30 | PBD-30 | 1 |
| PBS-5 | Розетка | XS3, XS6 | PBS-5 | PBS-5 | 2 |
| PBS-4 | Розетка | XS4 | type-c | PBS-4 | 1 |
| PBS-8 | Розетка | XS5 | PBS-8 | PBS-8 | 1 |
| CON-4F driver | Розетка | XS7, XS8 | PBS-6 | CON-4F driver | 2 |