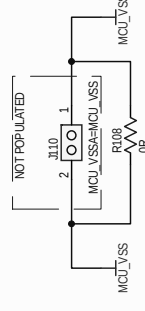
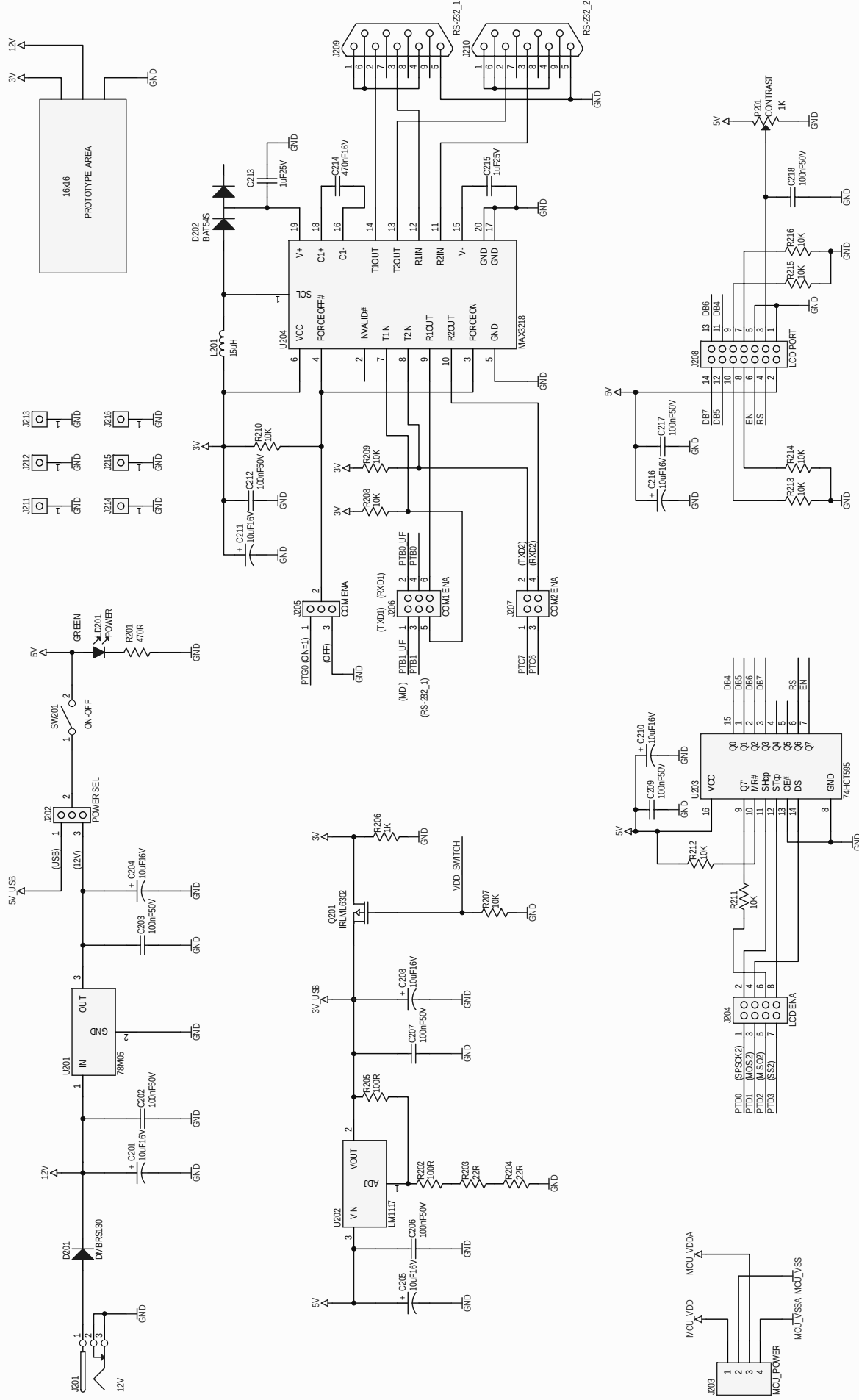
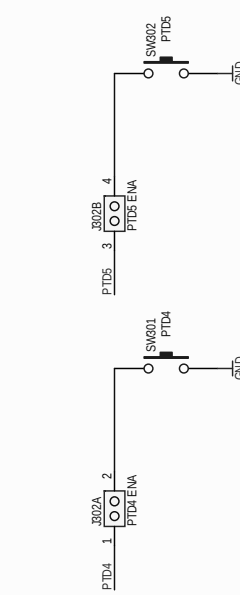
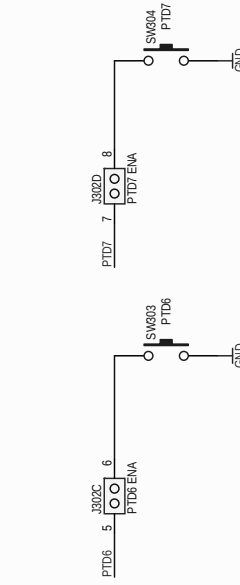
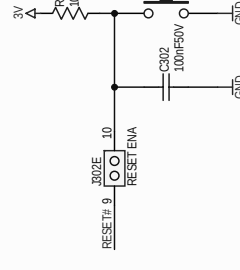
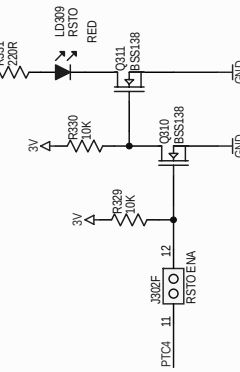
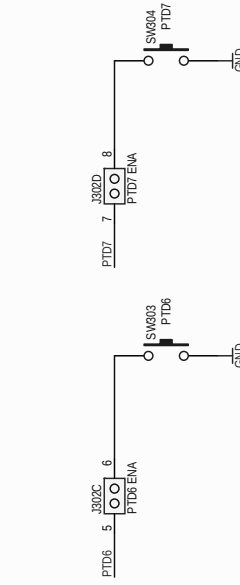
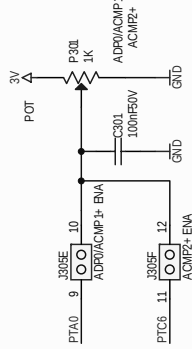
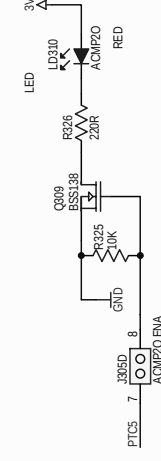
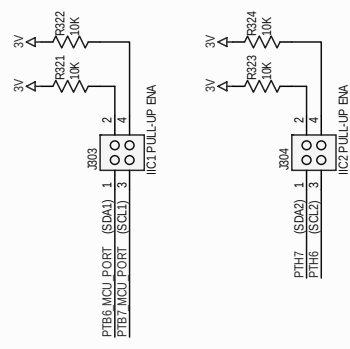
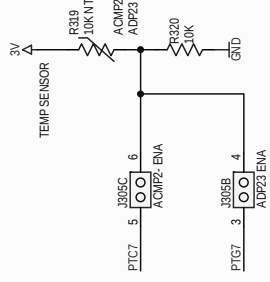
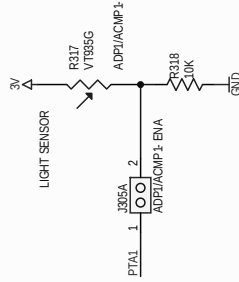
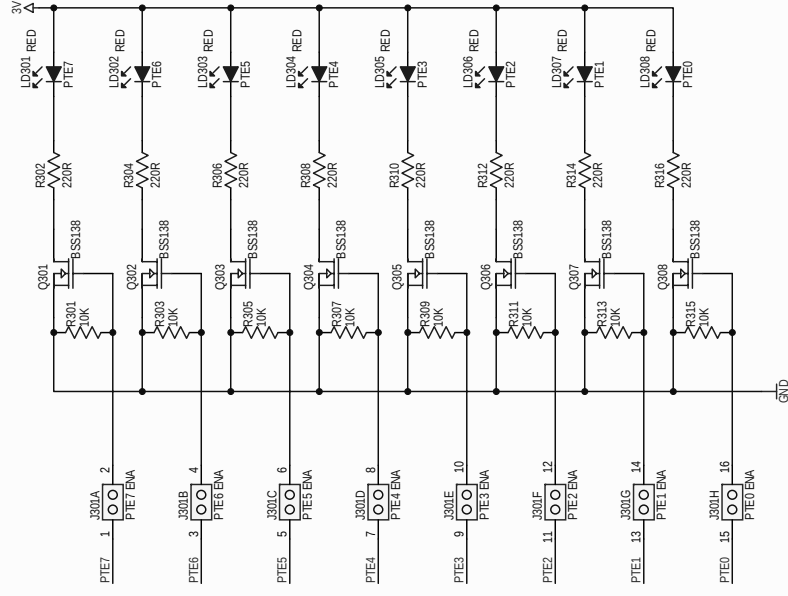


# **EVBQE128**

## **Schematic and Bill of Material**









# EVBQE128 Bill of Material

| Qty                        | Description                                                              | Ref. Designators                                                                                                       | Vendor Part#                            |
|----------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <b>Buzzers/Speakers</b>    |                                                                          |                                                                                                                        |                                         |
| 1                          | Buzzer 12x12mm pitch 12,0mm                                              | BZ301                                                                                                                  | Murata, PKLCS1212E4001-R1               |
| <b>Capacitors</b>          |                                                                          |                                                                                                                        |                                         |
| 20                         | Ceramic Capacitor 100nF X7R 50V 0805                                     | C101, C102, C105, C106, C202, C203, C206, C207, C209, C212, C217, C218, C301, C302, C404, C406, C407, C408, C410, C411 | Walsin, 0805B104K500CT                  |
| 2                          | Ceramic Capacitor 1uF X7R 25V 0805                                       | C213, C215                                                                                                             | Walsin, 0805B105K250CT                  |
| 2                          | Ceramic Capacitor 22pF NP0 50V 0805                                      | C401, C402                                                                                                             | Walsin, 0805N220K500CT                  |
| 1                          | Ceramic Capacitor 470nF X7R 16V 0805                                     | C214                                                                                                                   | Walsin, 0805B474K160CT                  |
| 12                         | Tantalum Capacitor 10uF 16V size B                                       | C103, C104, C201, C204, C205, C208, C210, C211, C216, C403, C405, C409                                                 | NIC Components, NTC-T106M16TRBF         |
| <b>Connectors</b>          |                                                                          |                                                                                                                        |                                         |
| 1                          | Box Header Connector 6 way male straight solder pitch 2,54mm             | J102                                                                                                                   | Coxoc, 302A-06PGAS003                   |
| 1                          | DC Power Connector 2.1 mm male 90° PCB mounting                          | J201                                                                                                                   | Samar, 22HP037                          |
| 2                          | D-Sub Connector female 90° 9-pin                                         | J209, J210                                                                                                             | Coxoc, 205A-09FSTUBE3                   |
| 4                          | Header Connector 2x2 pin male gold straight 6mm pitch 2,54mm             | J207, J303, J304, J402                                                                                                 | Coxoc, 307A-080GBSAA3                   |
| 2                          | Header Connector 3x1 pin male gold straight 6mm pitch 2,54mm             | J202, J205                                                                                                             | Coxoc, 307A-040GASAA3                   |
| 1                          | Header Connector 3x2 pin male gold straight 6mm pitch 2,54mm             | J206                                                                                                                   | Coxoc, 307A-080GBSAA3                   |
| 1                          | Header Connector 4x2 pin male gold straight 6mm pitch 2,54mm             | J204                                                                                                                   | Coxoc, 307A-080GBSAA3                   |
| 2                          | Header Connector 6x2 pin male gold straight 6mm pitch 2,54mm             | J103, J302                                                                                                             | Coxoc, 307A-080GBSAA3                   |
| 2                          | Header Connector 7x2 pin male gold straight 6mm pitch 2,54mm             | J208, J305                                                                                                             | Coxoc, 307A-080GBSAA3                   |
| 1                          | Header Connector 8x2 pin male gold straight 6mm pitch 2,54mm             | J301                                                                                                                   | Coxoc, 307A-080GBSAA3                   |
| 1                          | PCB Terminal Block Connector Female 4 pin pitch 2,54mm                   | J203                                                                                                                   | Phoenix Contact, 1725672                |
| 6                          | PCB Terminal Connector black hole size1,32mm 1-pin                       | J211, J212, J213, J214, J215, J216                                                                                     | William Hughes, 100-103                 |
| 39                         | Shunt jumper 2,54mmmm totally insulated black pitch 2,54mm               |                                                                                                                        | Coxoc, 308A02PGBA003                    |
| 1                          | Socket Connector female 40x2 pin gold straight solder h=7mm pitch 2,54mm | J101                                                                                                                   | Preci-dip, 803-91-080-10-001001         |
| 1                          | USB Connector Receptacle Type B 90° 4-pin                                | J401                                                                                                                   | Coxoc, 317A-04PSB0003                   |
| <b>Crystals</b>            |                                                                          |                                                                                                                        |                                         |
| 1                          | SMD Crystal 12MHz HC-49USMD (11x5x3)                                     | Y401                                                                                                                   | Megatec, HC49/USM4-012M000000CR         |
| 1                          | SMD Crystal 32.768KHz (8X3.8) 4-pin                                      | Y101                                                                                                                   | Citizen, CM200S-032K768000AS            |
| <b>Diodes</b>              |                                                                          |                                                                                                                        |                                         |
| 2                          | Schottky Diode BAT54S SOT23                                              | D202, D402                                                                                                             | Philips Semiconductors, BAT54S          |
| 1                          | Schottky Diode MBRS130L SMB                                              | D201                                                                                                                   | On Semiconductor, MBRS130LT3G           |
| 1                          | Zener Diode BZX84 6.8V 1/4W SOT23                                        | D401                                                                                                                   | Philips Semiconductors, BZX84-A6V8      |
| <b>Fuses</b>               |                                                                          |                                                                                                                        |                                         |
| 1                          | Autorestore Fuse 0,5A 1812                                               | F401                                                                                                                   | Raychem Circuit Protection, miniSMDC050 |
| <b>Inductors</b>           |                                                                          |                                                                                                                        |                                         |
| 1                          | SMD Inductor 15uH 1,47A 2-pin                                            | L201                                                                                                                   | Würth, 744777115                        |
| <b>Integrated Circuits</b> |                                                                          |                                                                                                                        |                                         |

| Qty                   | Description                                  | Ref. Designators                                                                                                                                                                         | Vendor Part#                              |
|-----------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| 1                     | IC Logic Gate 74HCT595 SOIC16                | U203                                                                                                                                                                                     | Philips Semiconductors, 74HCT595D         |
| 1                     | IC Microcontroller MC9S12UF32 QFP100         | U401                                                                                                                                                                                     | Freescale, MC9S12UF32PU                   |
| 1                     | IC Transceiver RS-232 MAX3218 SSOP20         | U204                                                                                                                                                                                     | Maxim, MAX3218CAP                         |
| 1                     | IC Voltage Regulator LM1117-ADJ SOT223       | U202                                                                                                                                                                                     | National Semiconductor, LM1117MP-ADJ/NOPB |
| 1                     | IC Voltage Regulator LM78M05 5V TO252 (DPAK) | U201                                                                                                                                                                                     | National Semiconductor, LM78M05CDT        |
| <b>LEDs</b>           |                                              |                                                                                                                                                                                          |                                           |
| 1                     | SMD LED Green 1206                           | LD201                                                                                                                                                                                    | Agilent Technologies, HSMG-C150           |
| 10                    | SMD LED Red 1206                             | LD301, LD302, LD303, LD304, LD305, LD306, LD307, LD308, LD309, LD310                                                                                                                     | Agilent Technologies, HSMH-C150           |
| <b>Potentiometers</b> |                                              |                                                                                                                                                                                          |                                           |
| 2                     | Potentiometer 1K vertical adjust             | P201, P301                                                                                                                                                                               | Phier, PT10MVP102A2020                    |
| <b>Resistors</b>      |                                              |                                                                                                                                                                                          |                                           |
| 1                     | Photoresistor VT935G pitch 2,54mm            | R317                                                                                                                                                                                     | PerkinElmer Optoelectronics, VT935G       |
| 7                     | SMD Resistor 0R 5% 1/8W 0805                 | R101, R103, R104, R105, R106, R107, R108                                                                                                                                                 | Kamaya, RMC1/10JPTP                       |
| 1                     | SMD Resistor 1,5K 1% 0805                    | R403                                                                                                                                                                                     | Kamaya, RMC1/10K1501FTP                   |
| 1                     | SMD Resistor 100K 1% 0805                    | R408                                                                                                                                                                                     | Kamaya, RMC1/10K1003FTP                   |
| 4                     | SMD Resistor 100R 1% 0805                    | R202, R205, R410, R411                                                                                                                                                                   | Kamaya, RMC1/10K1000FTP                   |
| 31                    | SMD Resistor 10K 1% 0805                     | R207, R208, R209, R210, R211, R212, R213, R214, R215, R216, R301, R303, R305, R307, R309, R311, R313, R315, R318, R320, R321, R322, R323, R324, R325, R328, R329, R330, R406, R407, R409 | Kamaya, RMC1/10K1002FTP                   |
| 2                     | SMD Resistor 1K 1% 1/8W 0805                 | R206, R327                                                                                                                                                                               | Kamaya, RMC1/10K102FTP                    |
| 1                     | SMD Resistor 1M 1% 0805                      | R405                                                                                                                                                                                     | Kamaya, RMC1/10K1004FTP                   |
| 10                    | SMD Resistor 220R 1% 0805                    | R302, R304, R306, R308, R310, R312, R314, R316, R326, R331                                                                                                                               | Kamaya, RMC1/10K221FTP                    |
| 2                     | SMD Resistor 22R 1% 0805                     | R203, R204                                                                                                                                                                               | Kamaya, RMC1/10K220FTP                    |
| 2                     | SMD Resistor 33R 1% 0805                     | R401, R402                                                                                                                                                                               | Kamaya, RMC1/10K33R0FTP                   |
| 1                     | SMD Resistor 470R 1% 0805                    | R201                                                                                                                                                                                     | Kamaya, RMC1/10K4700FTP                   |
| 1                     | SMD Resistor 510R 1% 0805                    | R404                                                                                                                                                                                     | Kamaya, RMC1/10K5100FTP                   |
| <b>Sockets</b>        |                                              |                                                                                                                                                                                          |                                           |
| 1                     | IC Socket Tulip pitch 2,54mm DIP14           | U102                                                                                                                                                                                     | Preci-dip, 110-87-314-41-001101           |
| 1                     | ZIF IC Socket Plastic package QFP80          | U101                                                                                                                                                                                     | Enplas, OTQ-80-0.65-05                    |
| <b>Switches</b>       |                                              |                                                                                                                                                                                          |                                           |
| 5                     | Pushbutton Switch SMD                        | SW301, SW302, SW303, SW304, SW305                                                                                                                                                        | Augat, FSM4JSMA                           |
| 1                     | Slide Switch Slide Switch for PCB 3-pin      | SW201                                                                                                                                                                                    | Eledis, 7A11-A1STSE2                      |
| <b>Thermistors</b>    |                                              |                                                                                                                                                                                          |                                           |
| 1                     | NTC Thermistors 10K 10% 0805                 | R319                                                                                                                                                                                     | Siemens, B57620-C103-J62                  |
| <b>Transistors</b>    |                                              |                                                                                                                                                                                          |                                           |
| 11                    | NMOS Transistor BSS138 SOT23                 | Q301, Q302, Q303, Q304, Q305, Q306, Q307, Q308, Q309, Q310, Q311                                                                                                                         | On Semiconductor, BSS138LT1G              |
| 1                     | PMOS Transistor IRLML6302 SOT23              | Q201                                                                                                                                                                                     | International Rectifier, IRLML6302TRPBF   |