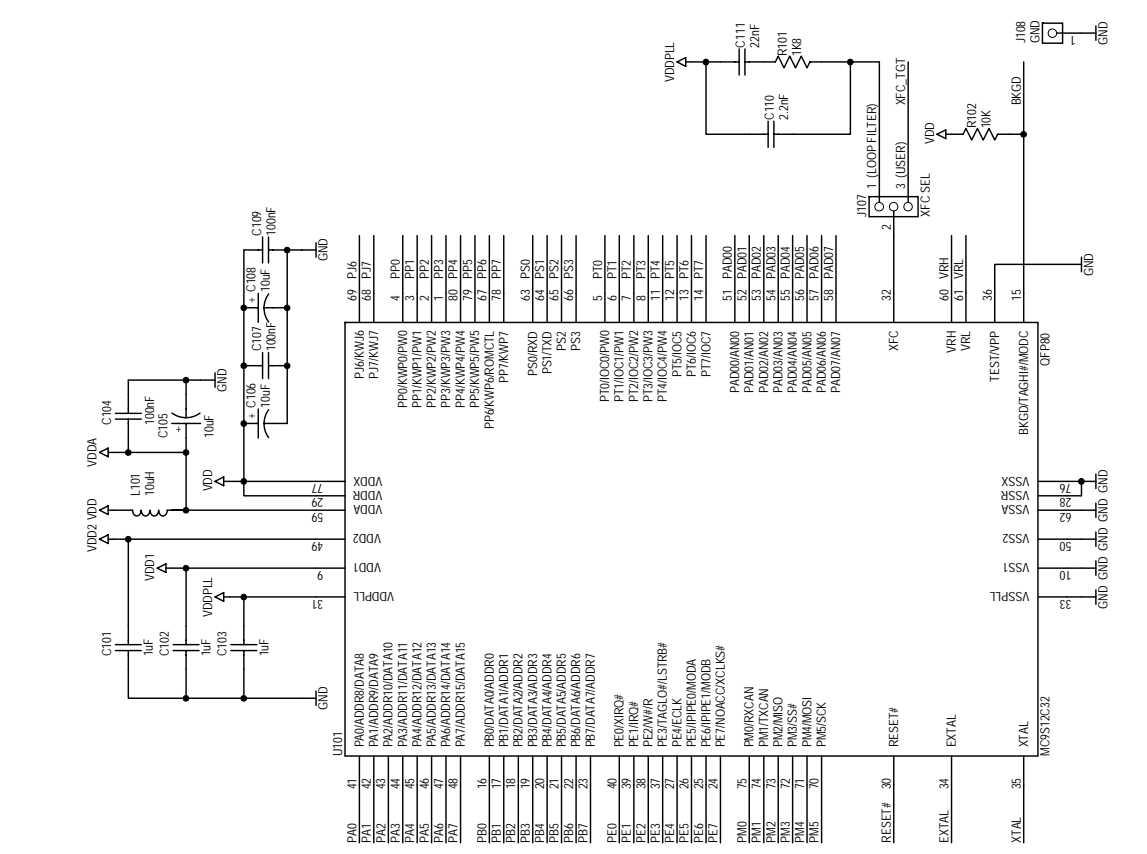
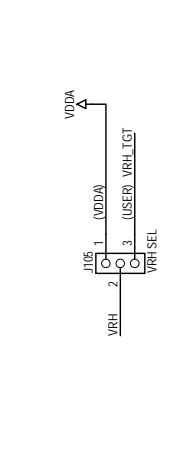
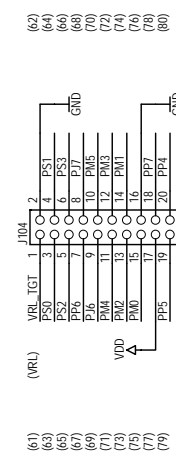
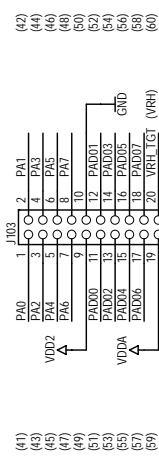
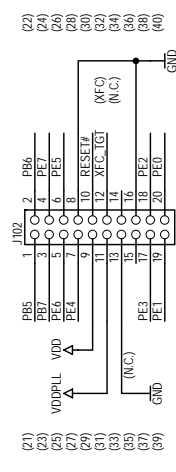
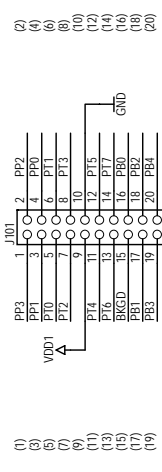
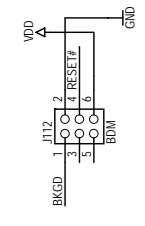
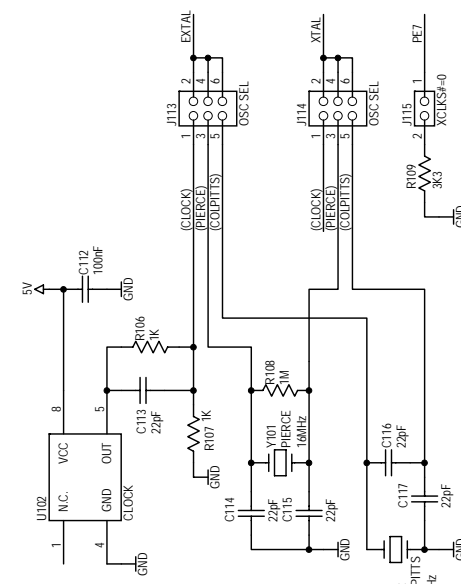
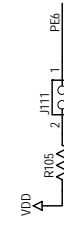
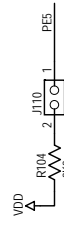
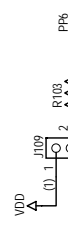


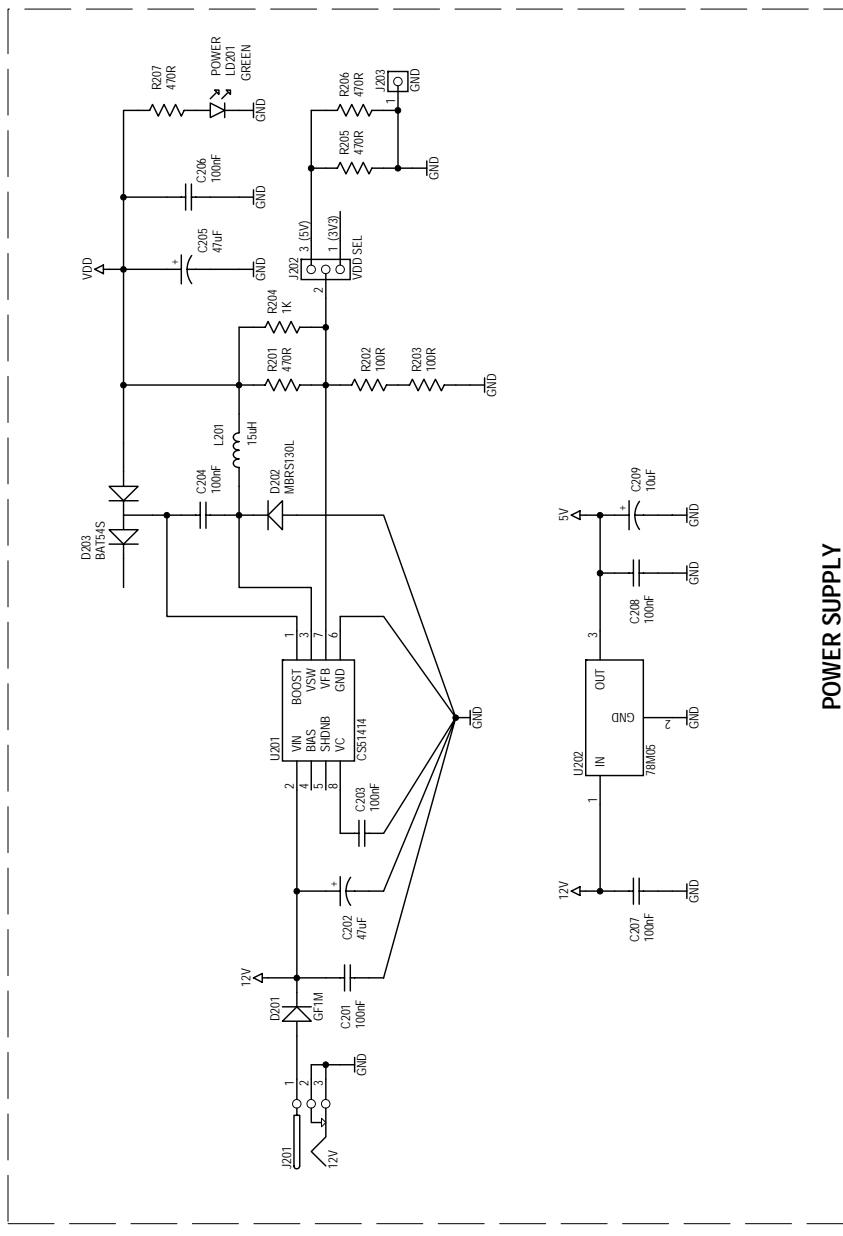
**ZK-S12-B**

**Schematic  
and  
Bill of Material**

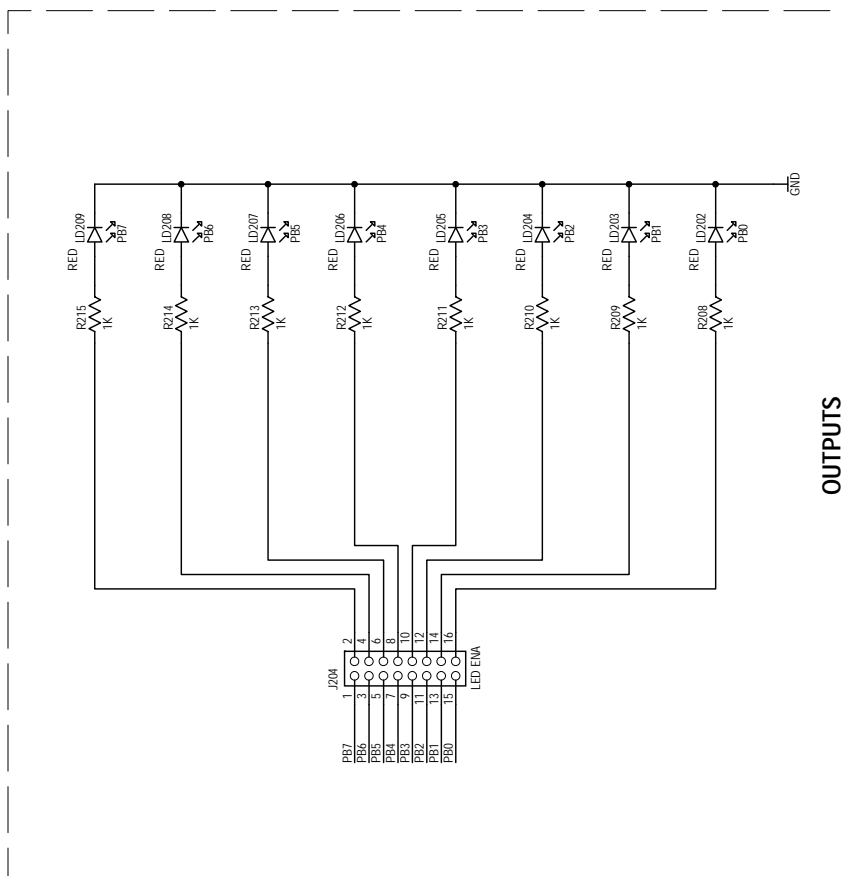


BDM CONNECTOR

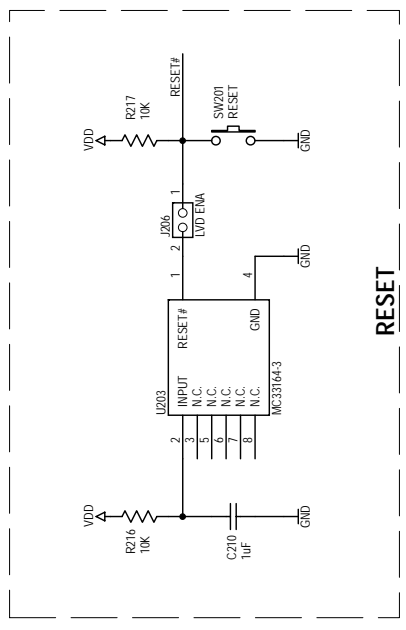
MCU



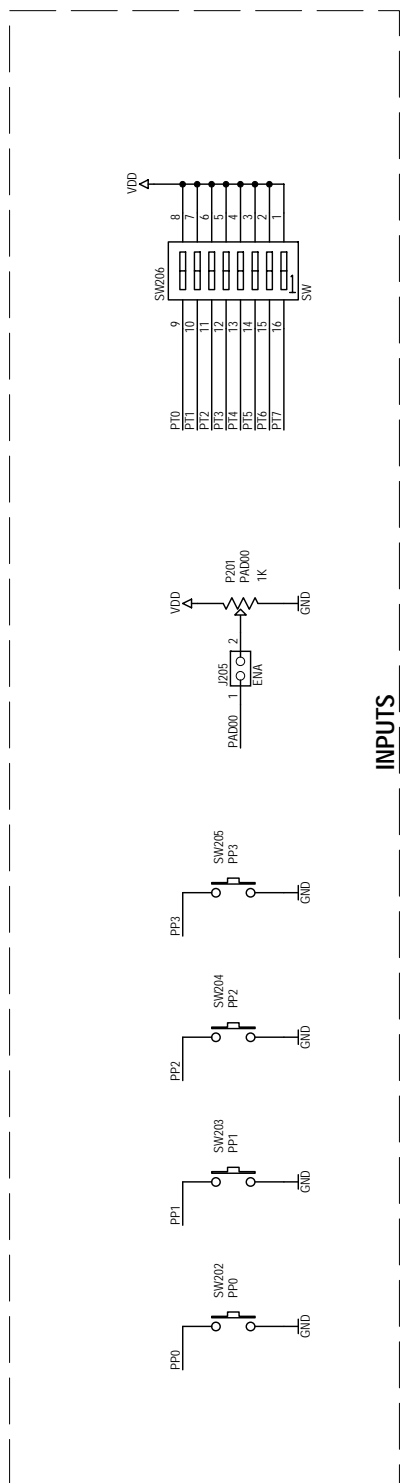
**POWER SUPPLY**



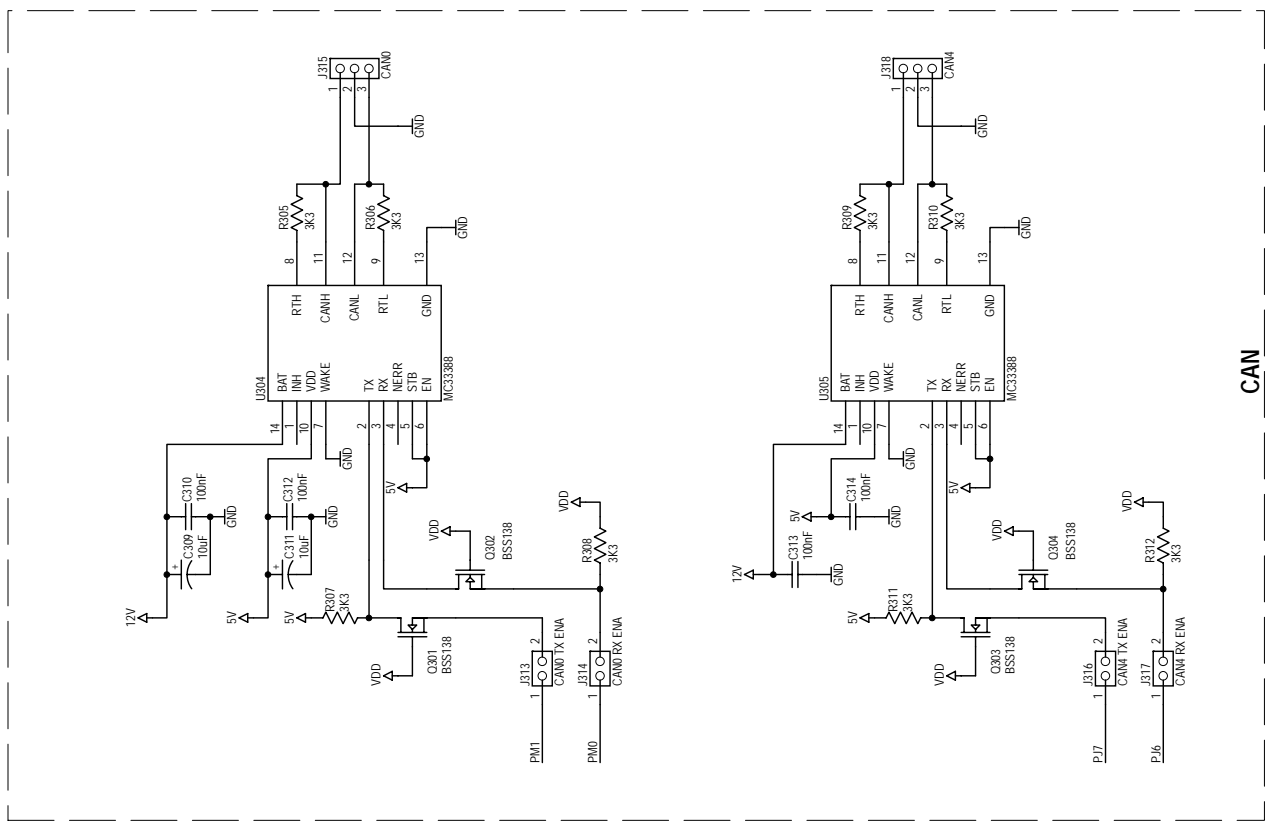
**OUTPUTS**



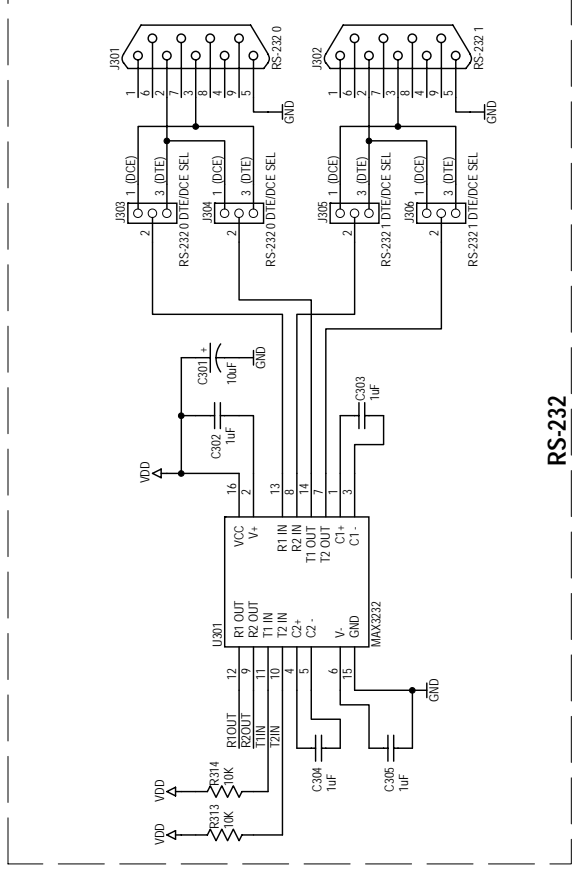
**RESET**



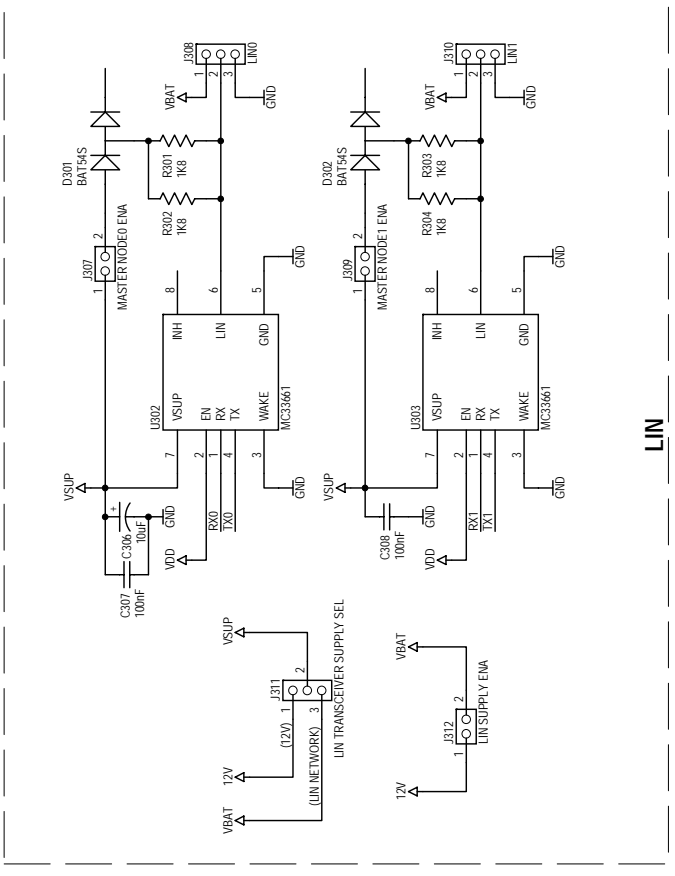
**INPUTS**



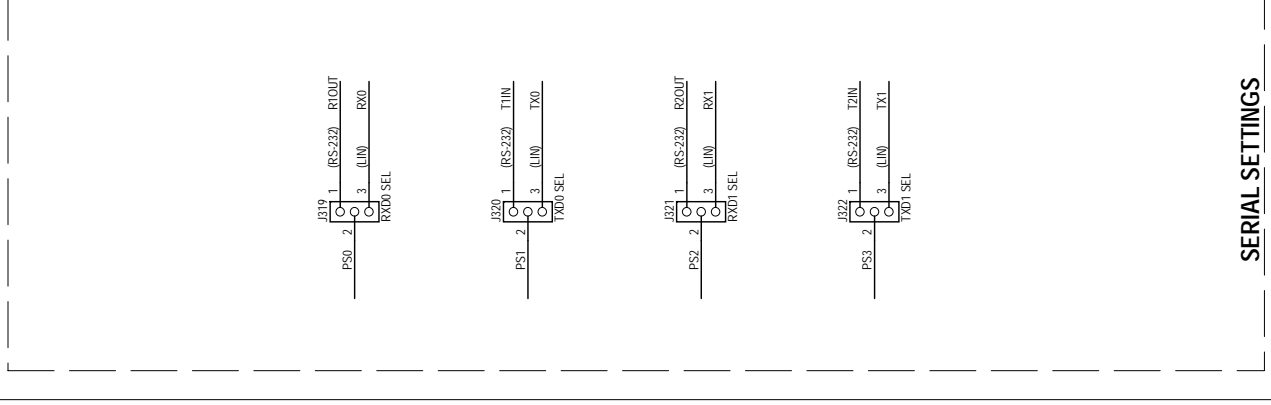
CAN



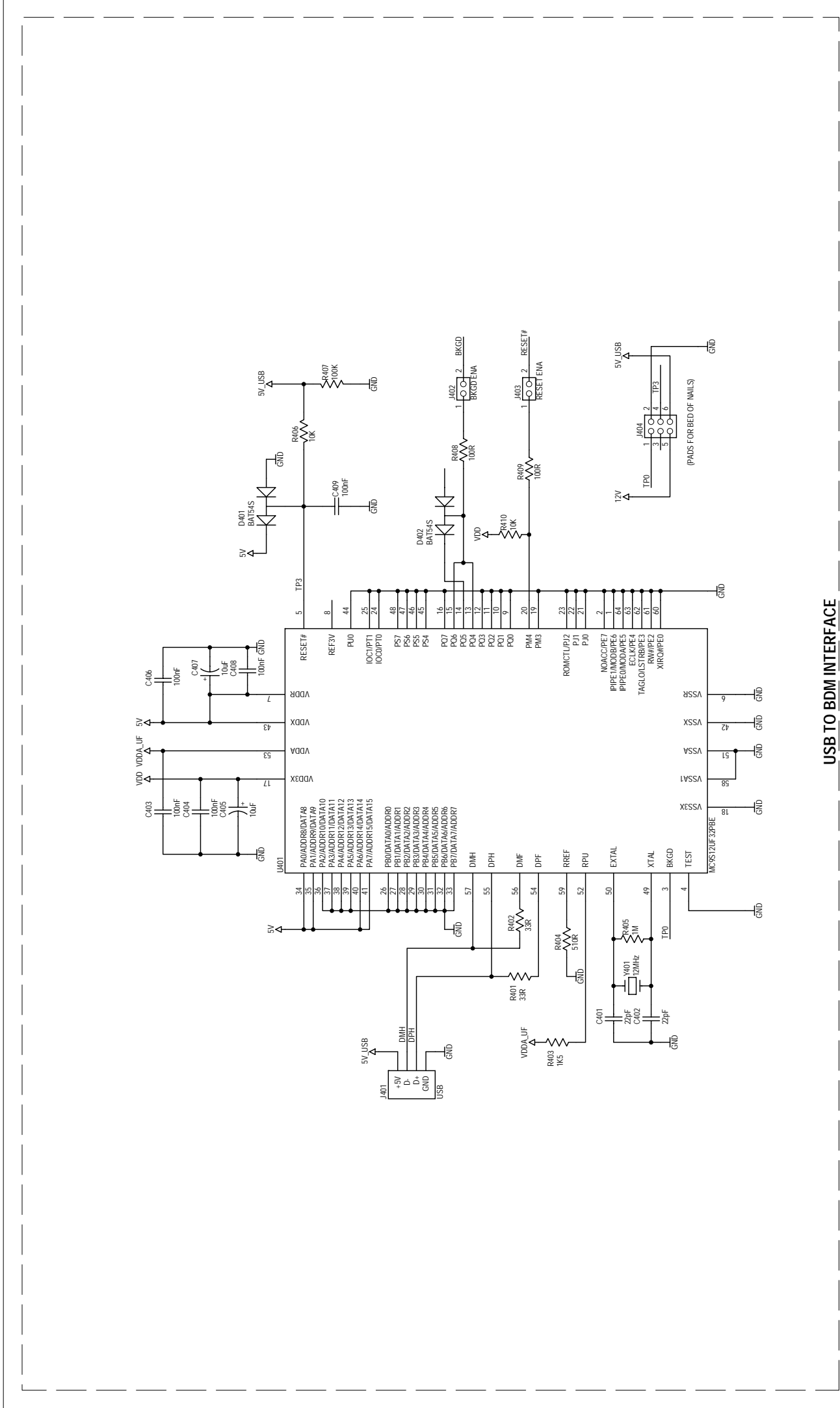
RS-232



LIN



SERIAL SETTINGS



USB TO BDM INTERFACE

# ZK-S12-B Bill of Material

Qty	Description	Ref. Designators	Vendor Part#
<b>Capacitors</b>			
21	Ceramic Capacitor 100nF X7R 50V 0805	C104, C107, C109, C112, C201, C203, C204, C206, C207, C208, C307, C308, C310, C312, C313, C314, C403, C404, C406, C408, C409	Walsin, 0805B104K500CT
8	Ceramic Capacitor 1uF X7R 25V 0805	C101, C102, C103, C210, C302, C303, C304, C305	Walsin, 0805B105K250CT
1	Ceramic Capacitor 2.2nF X7R 50V 0805	C110	Walsin, 0805B222K500CT
1	Ceramic Capacitor 22nF X7R 50V 0805	C111	Walsin, 0805B223K500CT
7	Ceramic Capacitor 22pF NP0 50V 0805	C113, C114, C115, C116, C117, C401, C402	Walsin, 0805N220K500CT
10	Tantalum Capacitor 10uF 16V size B	C105, C106, C108, C209, C301, C306, C309, C311, C405, C407	NIC Components, NTC-T106M16TRBF
2	Tantalum Capacitor 47uF 16V (low ESR) size D	C202, C205	NIC Components, NTC-L476M16TRD
<b>Connectors</b>			
1	Box Header Connector 6 way male straight solder pitch 2,54mm	J112	Coxoc, 302A-06PGAS003
1	DC Power Connector 2.1 mm male 90° PCB mounting	J201	Samar, 22HP037
2	D-Sub Connector 9 pin female 90°	J301, J302	Coxoc, 205A-09FSTUBE3
4	Header Connector 10x2 pin male gold straight 6mm pitch 2,54mm	J101, J102, J103, J104	Coxoc, 307A-080GBSAA3
14	Header Connector 2x1 pin male gold straight 6mm pitch 2,54mm	J110, J111, J115, J205, J206, J307, J309, J312, J313, J314, J316, J317, J402, J403	Coxoc, 307A-040GASAA3
18	Header Connector 3x1 pin male gold straight 6mm pitch 2,54mm	J105, J106, J107, J109, J202, J303, J304, J305, J306, J308, J310, J311, J315, J318, J319, J320, J321, J322	Coxoc, 307A-040GASAA3
2	Header Connector 3x2 pin male gold straight 6mm pitch 2,54mm	J113, J114	Coxoc, 307A-080GBSAA3
1	Header Connector 8x2 pin male gold straight 6mm pitch 2,54mm	J204	Coxoc, 307A-080GBSAA3
2	PCB Terminal Connector black hole size1,32mm 1-pin	J108, J203	William Hughes, 100-103
34	Shunt jumper 2,54mmmm totally insulated black pitch 2,54mm		Coxoc, 308A02PGBA003
1	USB Connector Receptacle Type B 90°	J401	Coxoc, 317A-04PSB0003
<b>Crystals</b>			
1	SMD Crystal 12MHz HC-49USMD (11x5x3)	Y401	Megatec, HC49/USM4-012M000000CR
2	SMD Crystal 16MHz HC-49USMD (11x5x3)	Y101, Y102	Megatec, HC49/USM4-016M000000CR
<b>Diodes</b>			
1	Rectifier Diode GF1M SMA	D201	Fairchild Semiconductor, GF1M
5	Schottky Diode BAT54S SOT23	D203, D301, D302, D401, D402	Philips, BAT54S
1	Schottky Diode MBRS130L SMB	D202	On Semiconductor, MBRS130LT3G
<b>Inductors</b>			
1	SMD Inductor 10uH 150mA 1210	L101	TDK, NL322522T-100J
1	SMD Inductor 15uH 1,47A 2-pin	L201	Würth, 744777115
<b>Integrated Circuits</b>			
1	IC Microcontroller MC9S12UF32 LQFP64	U401	Freescale, MC9S12UF32PB
1	IC Supervisor Reset MC33164D-3 SOIC8	U203	On Semiconductor, MC33164D-3R2G
2	IC Transceiver CAN MC33388 SOIC14	U304, U305	Freescale, MC33388D

Qty	Description	Ref. Designators	Vendor Part#
2	IC Transceiver LIN MC33661 SOIC8	U302, U303	Freescale, MC33661D/R2
1	IC Transceiver RS-232 MAX3232 SOIC16	U301	STMicroelectronics, ST3232CD
1	IC Voltage Regulator CS51414 SOIC8	U201	On Semiconductor, CS51414G
1	IC Voltage Regulator LM78M05 5V TO252 (DPAK)	U202	National Semiconductor, LM78M05CDT
<b>LEDs</b>			
1	SMD LED Green 1206	LD201	Agilent Technologies, HSMG-C150
8	SMD LED Red 1206	LD202, LD203, LD204, LD205, LD206, LD207, LD208, LD209	Agilent Technologies, HSMH-C150
<b>Potentiometers</b>			
1	Potentiometer 1K vertical adjust	P201	Phier, PT10MVP102A2020
<b>Resistors</b>			
1	SMD Resistor 1,5K 1% 0805	R403	Kamaya, RMC1/10K1501FTP
5	SMD Resistor 1,8K 1% 0805	R101, R301, R302, R303, R304	Kamaya, RMC1/10K1801FTP
1	SMD Resistor 100K 1% 0805	R407	Kamaya, RMC1/10K1003FTP
4	SMD Resistor 100R 1% 0805	R202, R203, R408, R409	Kamaya, RMC1/10K1000FTP
7	SMD Resistor 10K 1% 0805	R102, R216, R217, R313, R314, R406, R410	Kamaya, RMC1/10K1002FTP
11	SMD Resistor 1K 1% 0805	R106, R107, R204, R208, R209, R210, R211, R212, R213, R214, R215	Kamaya, RMC1/10K1001FTP
2	SMD Resistor 1M 1% 0805	R108, R405	Kamaya, RMC1/10K1004FTP
12	SMD Resistor 3,3K 1% 0805	R103, R104, R105, R109, R305, R306, R307, R308, R309, R310, R311, R312	Kamaya, RMC1/10K3301FTP
2	SMD Resistor 33R 1% 0805	R401, R402	Kamaya, RMC1/10K33R0FTP
4	SMD Resistor 470R 1% 0805	R201, R205, R206, R207	Kamaya, RMC1/10K4700FTP
1	SMD Resistor 510R 1% 0805	R404	Kamaya, RMC1/10K5100FTP
<b>Sockets</b>			
1	IC Socket 4(8) pin tulip for oscillator module DIP4	U102	E-tec, COS-084-S001-01
1	ZIF IC Socket QFP80	U101	Yamaichi, IC51-0804-956-2
<b>Switches</b>			
1	DIP Switch PTH low profile 8 positions DIP16	SW206	Tyco, 2-1437586-6
5	Push Button SMD	SW201, SW202, SW203, SW204, SW205	Augat, FSM4JSMA
<b>Transistors</b>			
4	NMOS Transistor BSS138 SOT23	Q301, Q302, Q303, Q304	On Semiconductor, BSS138LT1G