KSZ8851SNL (32-pin) Demo Board Black Diagram

Headers 5x2

RJ45 — LAN1 — T — KSZ8851SNL — Reset

STATUS LEDs

Crystal 25 MHz

EEPROM AT93C46

Power
+1.8V
+2.5V
+3.3V
MIC5209YM
x 2
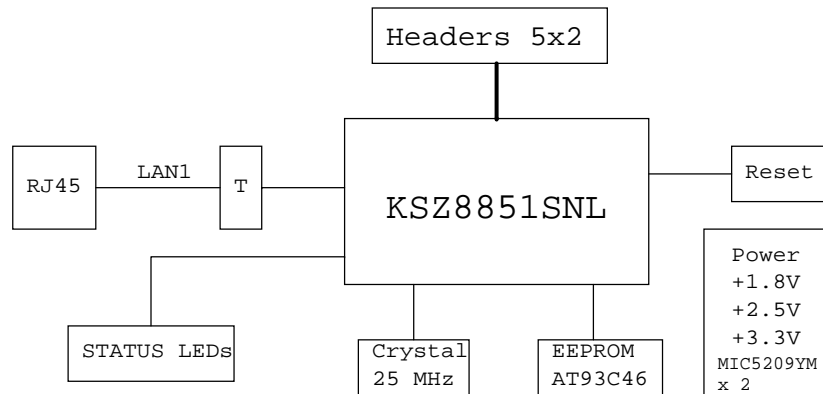
REVISION HISTORY

DATE:	DESCRIPTION	REVISION
12/07/07	1st Demo Board Design	1.0
04/21/10	Removed JP3 for EESK strapping option Add JP3 for connection between VDD_IO and 1.8V (if VDD_IO is 1.8V) Changed the LED pulled up to 3.3V Add 4.7K pull up on SO pin	1.1

DEMO BOARD PLACEMENT

U2 (EEPROM)

JP 2/3

Reset

LED2

LED1

RJ-45

T

U1
KSZ8851SNL

Header 5x2

Crystal

LED3

U3 (MIC5209YM)

JP 4/5/6

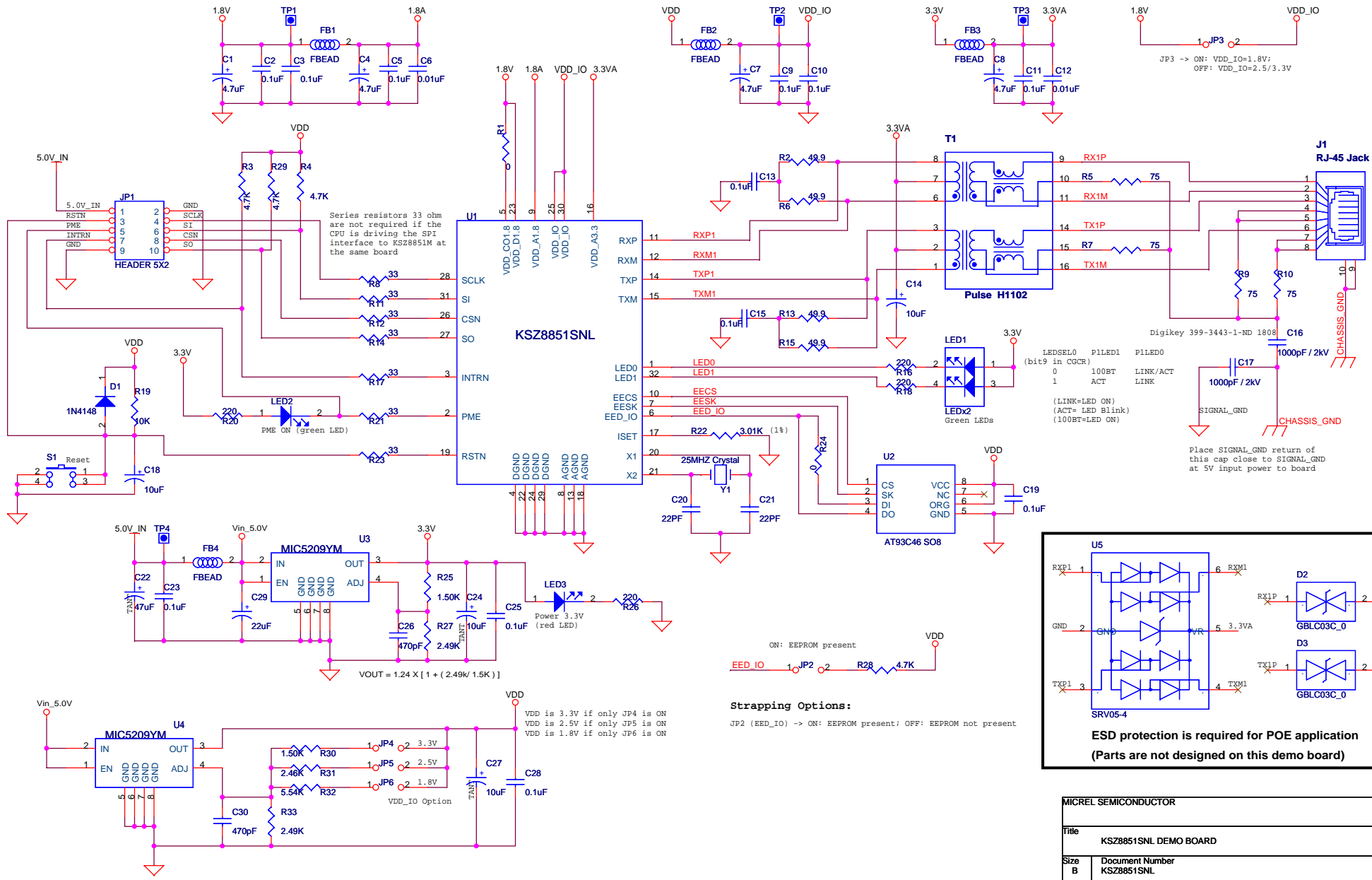U4 (MIC5209YM)

2.25"

3.75"
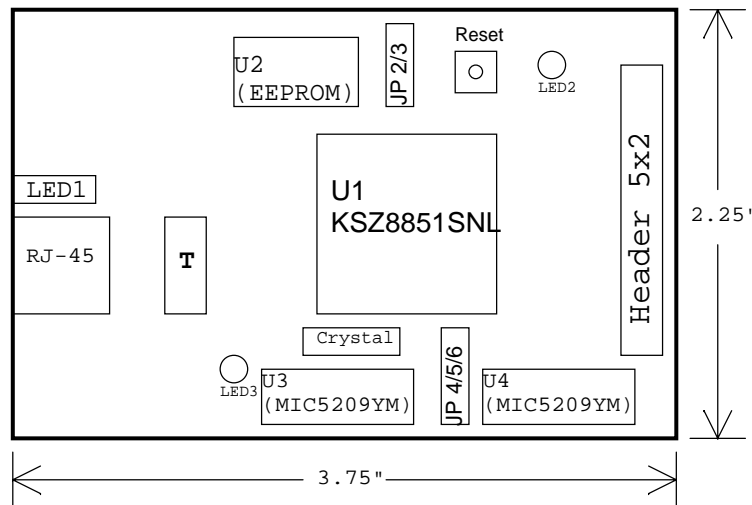
KSZ8851SNL Demo Board with SPI Interface

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Page 1: Revision History & Block Diagram
Page 2: KSZ8851SNL 32-pin Ethernet Controller Chip
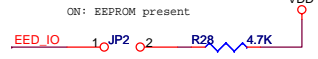
MICREL SEMICONDUCTOR CONFIDENTIAL

KSZ8851SNL Demo Board Schematic

Main IC: **U1 KSZ8851SNL**

Power rails: 1.8V, 1.8A, VDD_IO, 3.3VA, VDD, 3.3V, 3.3VA

Notes

Series resistors 33 ohm are not required if the CPU is driving the SPI interface to KSZ8851M at the same board.

JP3 -> ON: VDD_IO=1.8V; OFF: VDD_IO=2.5/3.3V

LEDSEL0 (bit9 in CGCR) | P1LED1 | P1LED0
0 | 100BT | LINK/ACT
1 | ACT | LINK

(LINK=LED ON)
(ACT= LED Blink)
(100BT=LED ON)

Digikey 399-3443-1-ND 1808

Place SIGNAL_GND return of this cap close to SIGNAL_GND at 5V input power to board

VOUT = 1.24 X [1 + (2.49k/ 1.5K)]

VDD is 3.3V if only JP4 is ON
VDD is 2.5V if only JP5 is ON
VDD is 1.8V if only JP6 is ON
VDD_IO Option

ON: EEPROM present

Strapping Options:

JP2 (EED_IO) -> ON: EEPROM present; OFF: EEPROM not present

ESD protection is required for POE application
(Parts are not designed on this demo board)

U5 SRV05-4
D2 GBLC03C_0
D3 GBLC03C_0

Components / Reference Designators

- FB1 FBEAD, FB2 FBEAD, FB3 FBEAD, FB4 FBEAD
- C1 4.7uF, C2 0.1uF, C3 0.1uF, C4 4.7uF, C5 0.1uF, C6 0.01uF
- C7 4.7uF, C9 0.1uF, C10 0.1uF
- C8 4.7uF, C11 0.1uF, C12 0.01uF
- TP1, TP2, TP3, TP4
- R1 0, R3 4.7K, R29 4.7K, R4 4.7K
- R2 49.9, R6 49.9, R5 75, R7 75
- R13 49.9, R15 49.9, R9 75, R10 75
- R8 33, R11 33, R12 33, R14 33, R17 33, R21 33, R23 33
- R16 220, R18 220, R20 220, R26 220
- R19 10K, R22 3.01K (1%), R24 0, R28 4.7K
- R25 1.50K, R27 2.49K, R30 1.50K, R31 2.46K, R32 5.54K, R33 2.49K
- C13 0.1uF, C14 10uF, C15 0.1uF, C16 1000pF / 2kV, C17 1000pF / 2kV
- C18 10uF, C19 0.1uF, C20 22PF, C21 22PF
- C22 47uF, C23 0.1uF, C24 10uF, C25 0.1uF, C26 470pF, C27 10uF, C28 0.1uF
- C29 22uF, C30 470pF
- D1 1N4148
- LED1, LEDx2 Green LEDs
- LED2 PME ON (green LED)
- LED3 Power 3.3V (red LED)
- Y1 25MHZ Crystal
- T1 Pulse H1102
- U2 AT93C46 SO8 (CS, SK, DI, DO, VCC, NC, ORG, GND)
- U3 MIC5209YM
- U4 MIC5209YM
- J1 RJ-45 Jack
- JP1 HEADER 5X2 (5.0V_IN, RSTN, PME, INTRN, GND / GND, SCLK, SI, CSN, SO)
- S1 Reset
- JP2, JP3, JP4 3.3V, JP5 2.5V, JP6 1.8V

U1 KSZ8851SNL pin labels
SCLK 28, SI 31, CSN 26, SO 27, INTRN 3, PME 2, RSTN 19
RXP 11, RXM 12, TXP 14, TXM 15
LED0 1, LED1 32, EECS 10, EESK 7, EED_IO 6
ISET 17, X1 20, X2 21
RXP1, RXM1, TXP1, TXM1
RX1P, RX1M, TX1P, TX1M
CHASSIS_GND, SIGNAL_GND

Title Block

MICREL SEMICONDUCTOR

Title: KSZ8851SNL DEMO BOARD

Size: B
Document Number: KSZ8851SNL
Rev: 1.1
Date: Thursday, April 22, 2010
Sheet 2 of 2