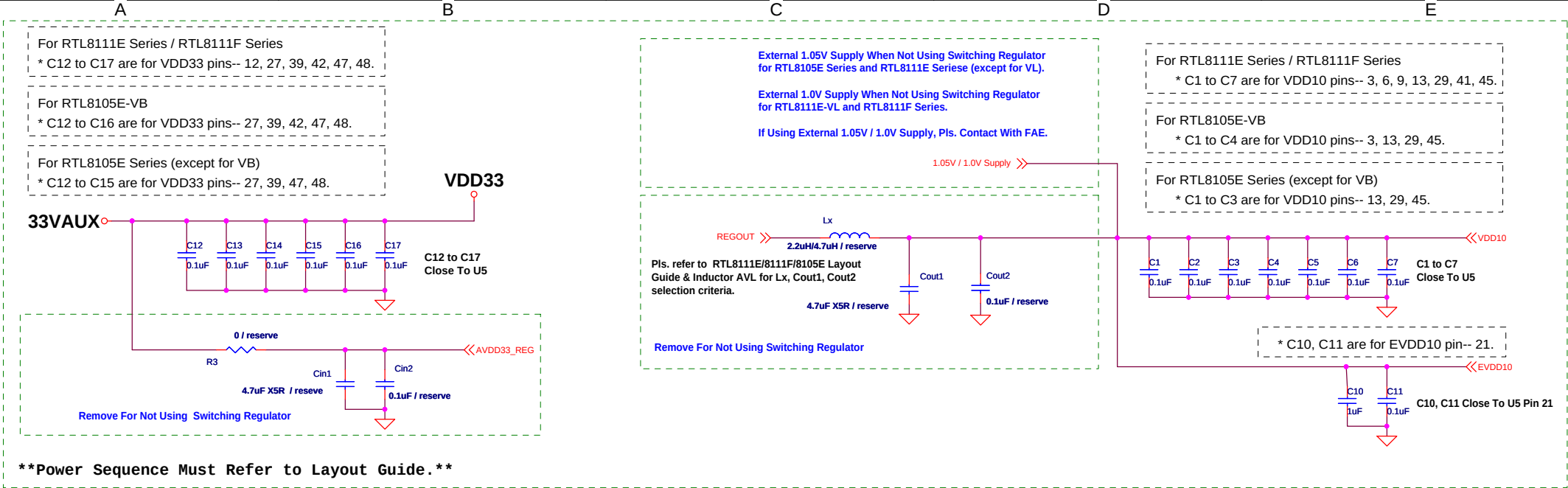


RTL8111E/RTL8111F/RTL8105E 48 Pin
Reference Schematic V113

PAGE	INDEX
1.	Title Page
2.	POWER
3.	CONTROLLER
4.	Reserved Component
5.	Optional Function
6.	R-BOM
7.	Change Notes



3.3V and 1.05V / 1.0V Power-Supply Configurations

	1.05V / 1.0V source	Lx	Cout1,2	Cin1,2	R3 / reserve	R23 / reserve	R24 / reserve
8111E Series/8111F Series/8105E Series	SWR	O	O	O	O	O	X
8105E Series (except for VB)	LDO	X	X	X	X	X	O
8111E Series/8111F Series/8105E-VB	External	X	X	X	X	X	O
8105E Series (except for VB)	External	X	X	X	X	O	X

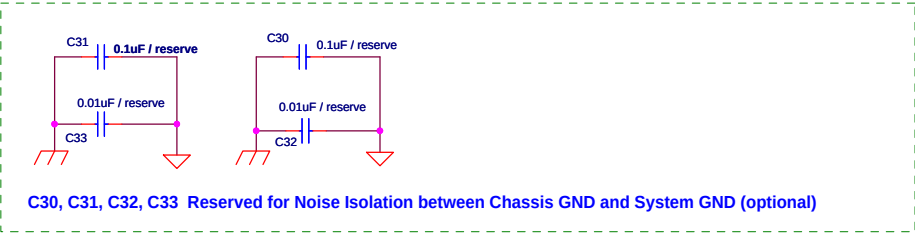
Note:

1. R3, R23, R24 are reserved for the convenience of changing the 1.05V / 1.0V supply source between SWR/LDO mode and external supply. No design change of PCB model is needed with these 3 resistors reserved.
2. Please refer to the table above when using different 1.05V / 1.0V supply source.

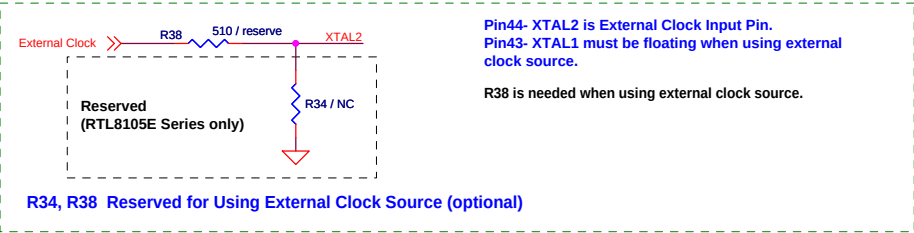
If only one 1.05V / 1.0V supply source is selected for one PCB model, i.e. no other choices are reserved:

1. R3, R23, and R24 are not necessary.
2. Just make a path of short to replace the use of R3/R23/R24 on the table.
3. SWR mode only (8111E series / 8111F series / 8105E series):
 - (1) R3 => short 33VAUX to AVDD33_REG.
 - (2) R23 => short ENSWREG to VDD33.
 - (3) R24 => not necessary.
4. LDO mode only (8105E series, except for VB):
 - (1) R24 => short ENSWREG to GND
 - (2) R3, R23 => not necessary.
5. External supply only (8111E series / 8111F series / 8105E series):
 - (1) R24 => short ENSWREG to GND
 - (2) R3, R23 => not necessary.
6. External supply only (8105E Series, except for VB):
 - (1) R23 => short ENSWREG to VDD33.
 - (2) R3, R24 => not necessary.

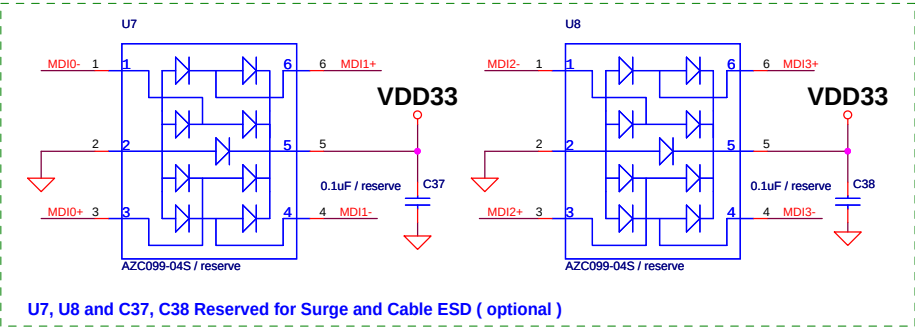
Reserved for Noise Isolation



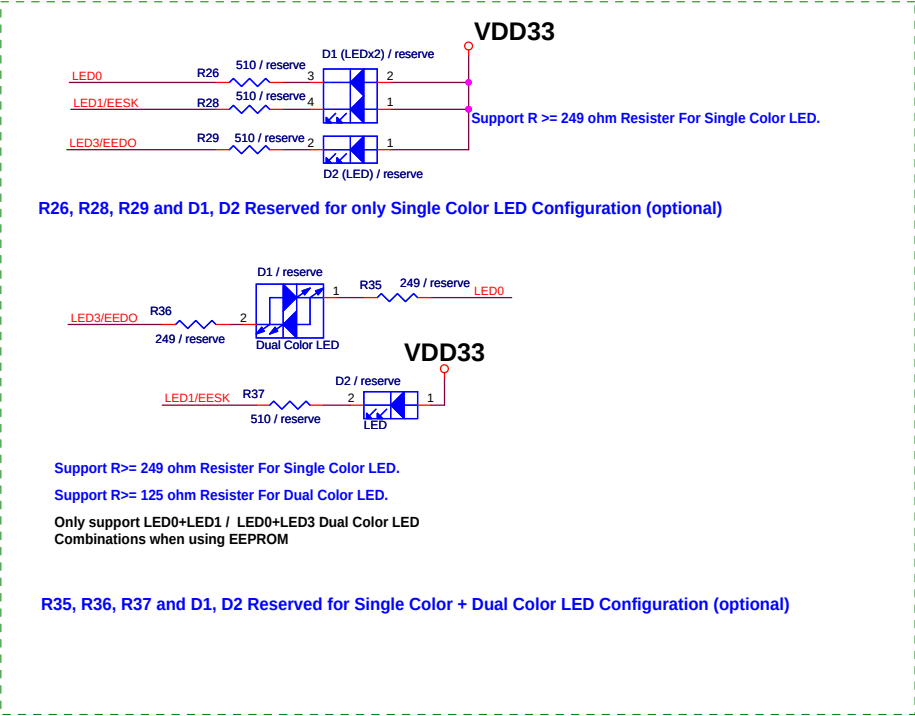
Reserved for Using External Clock Source



Reserved for TVS Components

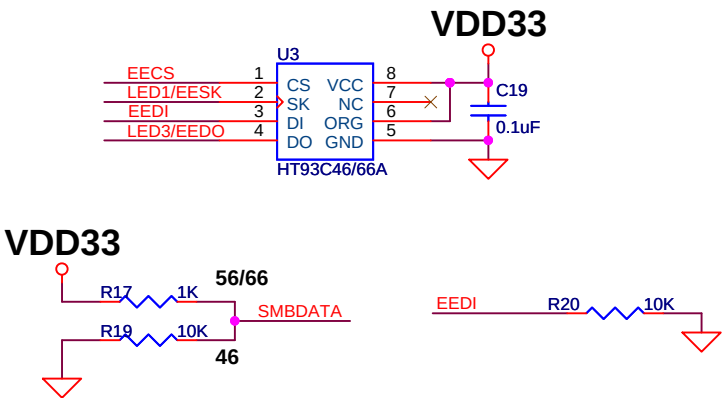


Optional LED Configurations



For RTL8111E Series and RTL8111F Series with EEPROM / ASF Function (2 Options)

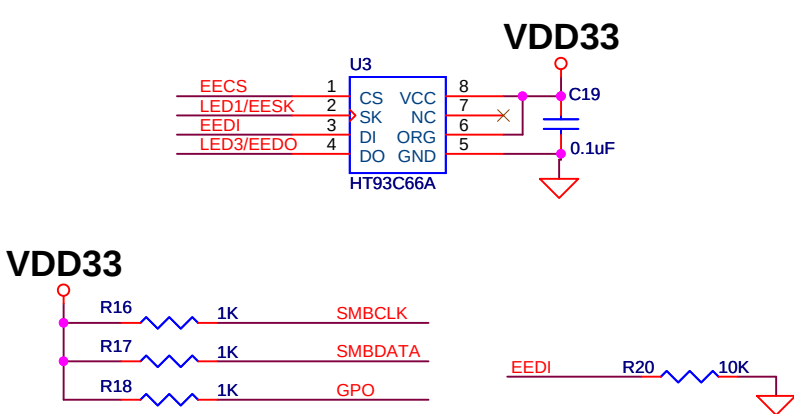
Using EEPROM without ASF function



1. All components in this block will be needed only if an EEPROM is uested without ASF function.
Using R17 For 93C56/66
Using R19 For 93C46

Note: For RTL8111E-VL and RTL8111F, R17 must be 1K.

Using EEPROM(93C66) with ASF function

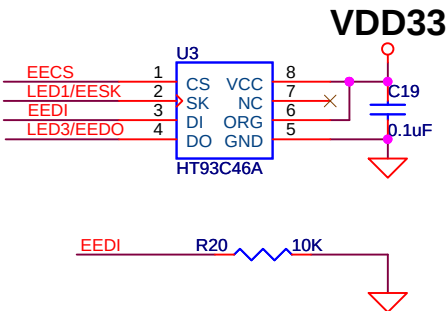


2. All components in this block will be needed only if an EEPROM of 93C66 is uested with ASF function.

Note: This block is also for RTL8111E-VC using EEPROM_Less with ASF function.

For RTL8105E Series EEPROM Function (1 Option)

Using EEPROM (93C46)



1. All components in this block will be needed only if an EEPROM of 93C46 is uested.

SMBCLK
SMBDATA
GPO
EEDI
EECS
LED1/EESK
LED3/EEDO

Realtek Semiconductor Corp.		
No.2, Industry E. Rd. IX, Science-Based Industrial Park, Hsinchu, Taiwan 300		
Title		
RTL8111E/8111F/8105E Reference Schematic: Optional Function		
Size	Document Number	Rev
A4	RTL8111E/8111F/8105E Reference Schematic	
Date:	Wednesday, August 31, 2011	Sheet 5 of 7

Bill Of Materials July 29,2011 17:26:17

Item	Quantity	Reference	Part
1	1	CON1	RJ45S1X1
2	18	C1,Cout2,Cin2,C2,C3,C4, C5,C6,C7,C11,C12,C13,C14, C15,C16,C17,C34,C36	0.1uF
3	2	Cout1, Cin1	4.7uF X5R
4	1	C10	1uF
5	2	C21,C22	27pF
6	1	C26	0.01uF
7	1	C35	1000P 2KV
8	1	D1	Dual Color LED
9	1	D2	LED
10	1	Lx	2.2uH/4.7uH
11	1	R15	2.49K 1%
12	1	R25	1K
13	4	R30, R31, R32, R33	75
14	2	R35, R36	249
15	1	R37	510
16	1	U5	RTL8105E/8111E/8111F
17	1	U6	GST5009-R
18	1	X1	XTAL25M

Note:

1. This is an R-BOM example of RTL8111F series, which only the efuse is used without ASF function.
2. The R-BOM here is calculated with the SWR mode for 1.05V / 1.0V supply only, and no circuit reserved for selecting external-supply source.

Realtek Semiconductor Corp.		
No.2, Industry E. Rd. IX, Science-Based Industrial Park, Hsinchu, Taiwan 300		
Title RTL8111E/8111F/8105E Reference Schematic: R-BOM		
Size	Document Number RTL8111E/8111F/8105E Reference Schematic	Rev
Date:	Wednesday, August 31, 2011	Sheet 6 of 7

Change Notice from 1.00 to 1.01

1. C17 rename to Cin1, C18 rename to Cin2. C8 rename to Cout1, C9 rename to Cout2, L1 rename to Lx to align with SWR Layout Guide (Page 2.)
2. Add supported resistor values for Dual Color LED, supported combinations when using EEPROM (Page 3.)
3. Add R38 for external clock circuit. (Page 3.)

Change Notice from 1.01 to 1.02

1. Update Pin name(Pin3, Pin47) For RTL8105E.(Page 3.)
2. Update Capacitor Description For RTL8105E and RTL8111E. (Page 2.)
3. Modify Center tap Schematic for Power Optimization. Center tap short and coconnector 1uF to GND.(Page 3.)
4. Add RTL8105E Optional Function Schematic.(Page 4.)

Change Notice from 1.02 to 1.03

1. Modify Efuse Autoload Schematic, SMBDATA Pull Down. (Page 4.)

Change Notice from 1.03 to 1.04

1. Remove TWSI Schematic. (Page 3 & 4.)
2. Remove TWSI Share Pin Name. (Page 3 & 4.)
3. Add Note For Lanwakeb & Clkreqb.(Page 3.)
4. Add Note For Function Option for Using Efuse/BIOS Patch. (Page 4.)

Change Notice from 1.04 to 1.05

1. Add Resistor For SMB Bus.(Page 3.)
2. Add C26 Value Note.(Page 3.)
3. Add SWR Power Sequence Note.(Page2.)

Change Notice from 1.05 to 1.06

1. Modify Power Mode Table. (Page 2.)
2. Remove C4, C16 For RTL8105E-VC. (Page 2.)
3. Modify Lx Value and Update Note. (Page 2.)
4. Modify C26 Value Note. (Page 3.)

Change Notice from 1.06 to 1.07

1. Remove XTAL14.318M from XTAL Circuit. (Page 3.)

Change Notice from 1.07 to 1.08

1. Modify R17 Value. (Page 3 & 4.)
2. Add note for RTL8111E-VL and RTL8111E-VC (Page 4.)
3. Remove R11 for RTL8105E-VC. (Page 4.)

Change Notice from 1.08 to 1.09

1. Modify Note For RTL8105E Series. (Page 2.)
2. Modify Note For RTL8105E Series EEPROM / Efuse Function. (Page 4.)

Change Notice from 1.09 to 1.10

1. Add Note For RTL8111F Series.
2. Modify Note For External Power Supply When Not Using Switching Regulator (Page 2.)

Change Notice from 1.10 to 1.11

1. Add Reserved Resistor When Using External Clock For RTL8105E Series (Page 3.)

Change Notice from 1.11 to 1.12

1. Add Page "Reserved Components" (Page 4) and move all optional components to this page.
2. Add page "R-BOM", which is an example of R-BOM list.
3. Remove the block of Efuse-only (without ASF function) in page "Optional Function" for 8111E/8111F/8105E series.

Change Notice from 1.12 to 1.13

1. Add R20, EEDI Pull Down, For RTL8105E Series EEPROM Function. (Page 5.)

Realtek Semiconductor Corp.		
No.2, Industry E. Rd. IX, Science-Based Industrial Park, Hsinchu, Taiwan 300		
Title RTL8111E/8111F/8105E Reference Schematic: Change Notes		
Size	Document Number RTL8111E/8111F/8105E Reference Schematic	Rev
Date:	Wednesday, August 31, 2011	Sheet 7 of 7