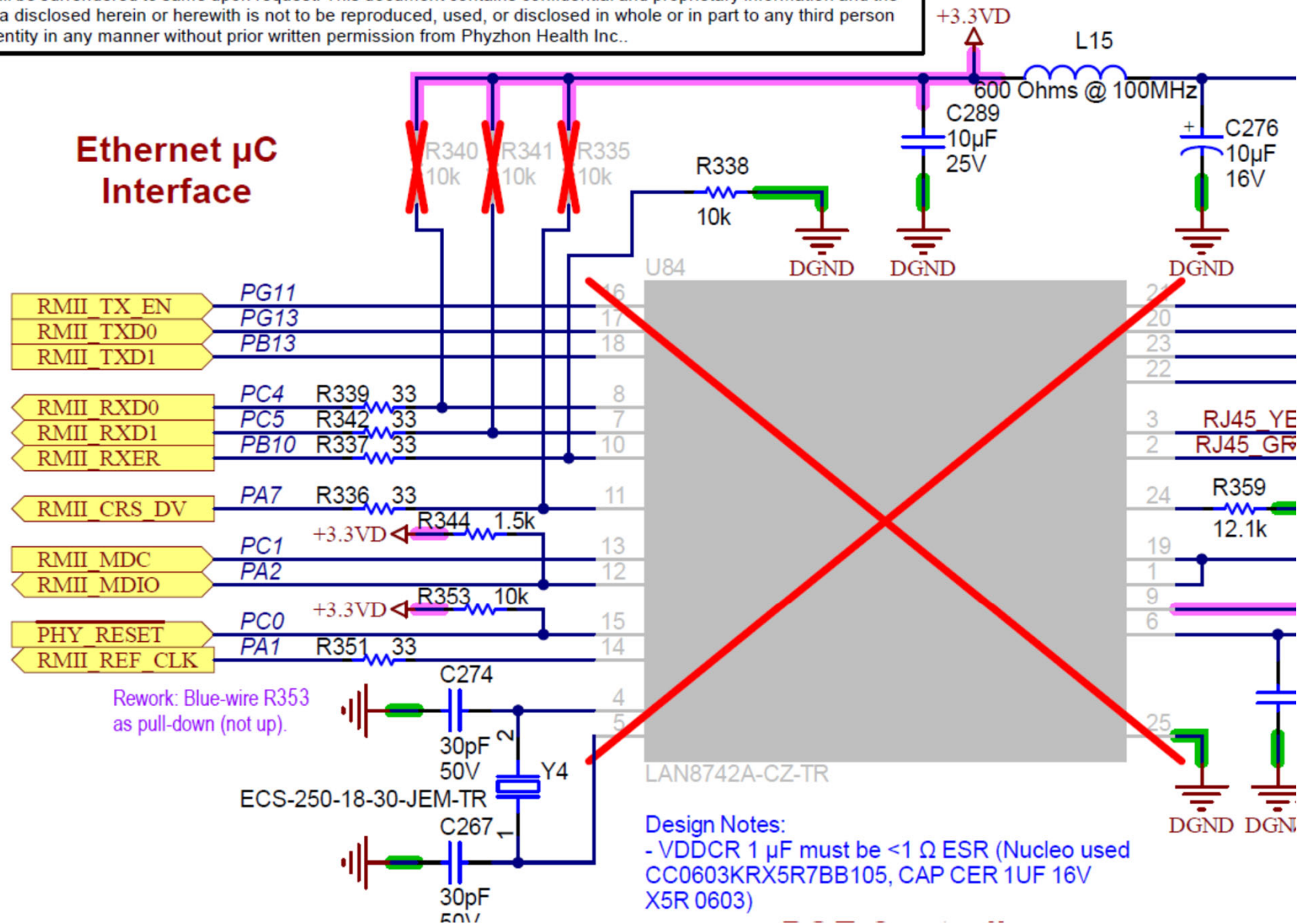


AE-Main - DP83826 PHY Evaluation Status

- Original configuration: AE-Main controller with LAN8742A (U84) PHY
- DP83826 PHY test configuration: AE-Main with U84 removed; wired connections to DP83826EVM J22 MAC header
 - Ethernet connection through DP83826EVM media interface/RJ45
 - Demonstrate Ethernet functionality using DP83826EVM PHY in place of LAN8742A
- Power only test of EVM. Setup for powering externally using only the J22 header 3.3V/GND connections.
 - 3.3V connect to J22-2; GND connect to J22-1; power from bench supply
 - On EVM: install jumper J7 & J8; remove jumper J9
 - 3.3V @ 50 mA with no E'net cable connected (no EVM RJ45 LED activity)
 - EVM LED0 active when Enet cable connector (LED0 is Link Status)
- EVM configuration for Advanced Mode Straps
 - Strap 8: 2.49k Ω pull-up to VDDIO (U14-14 (R101) to U14-17); All the rest leave as defaults
 - When connected, LED0 active and LED3 on (Speed, High for 10BASE-T)
 - Check for 50MHz Ref Clk output (RX_CLK on J22-22) – Present
- AE-Main wire connections: 30AWG wire-wrap wire for all signal; 24AWG stranded wire for power/gnd
 - All signal wires 3.25" long, tack to AE-Main PCB with hot-glue for strain-relief
- No Ethernet communication with known working AE-Main (verified before removing LAN8742A PHY)
 - Cannot establish connection to host computer
 - No ping response to AE-Main IP address

AE-Main PHY Interface w/ U84 Removed

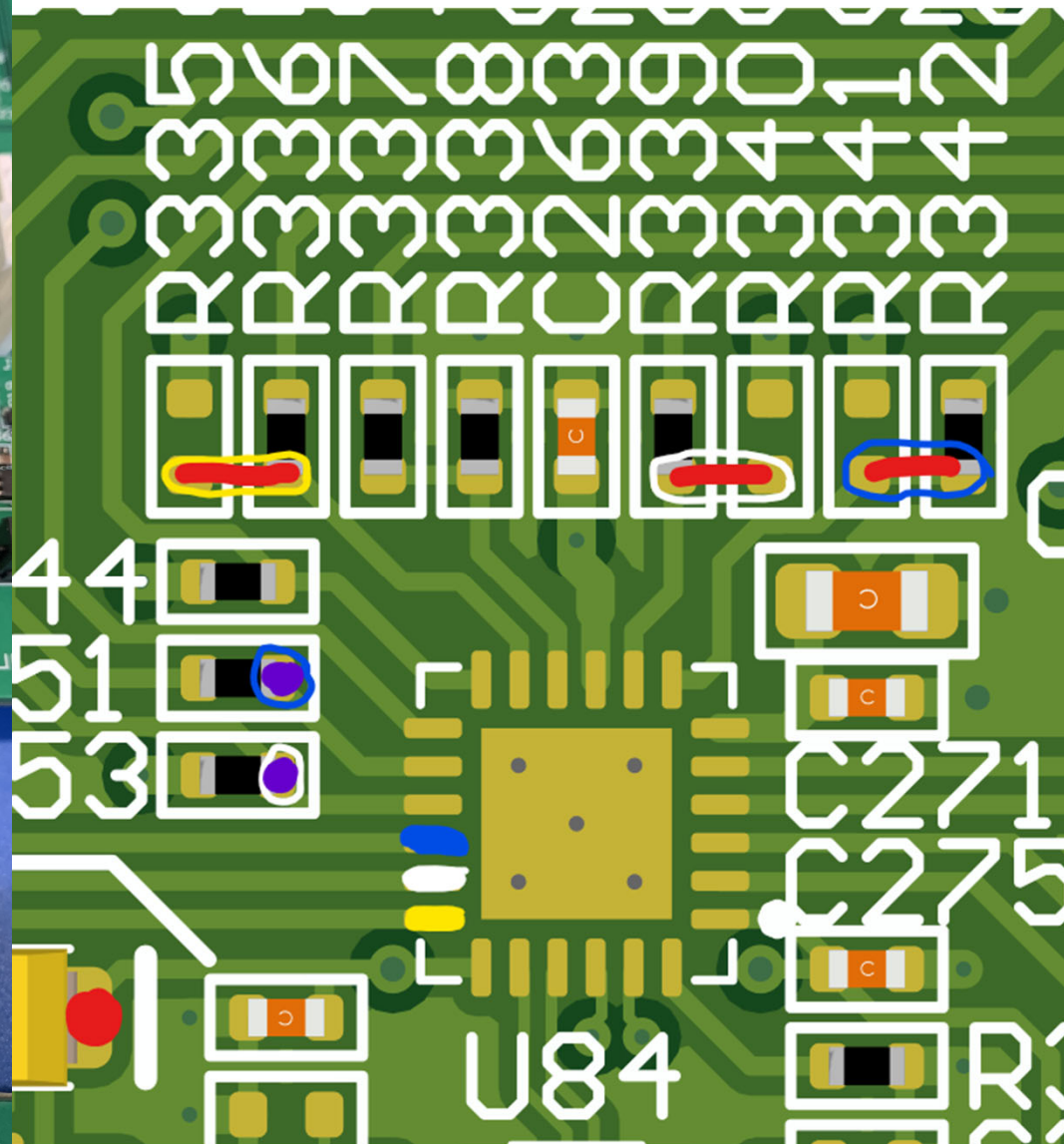
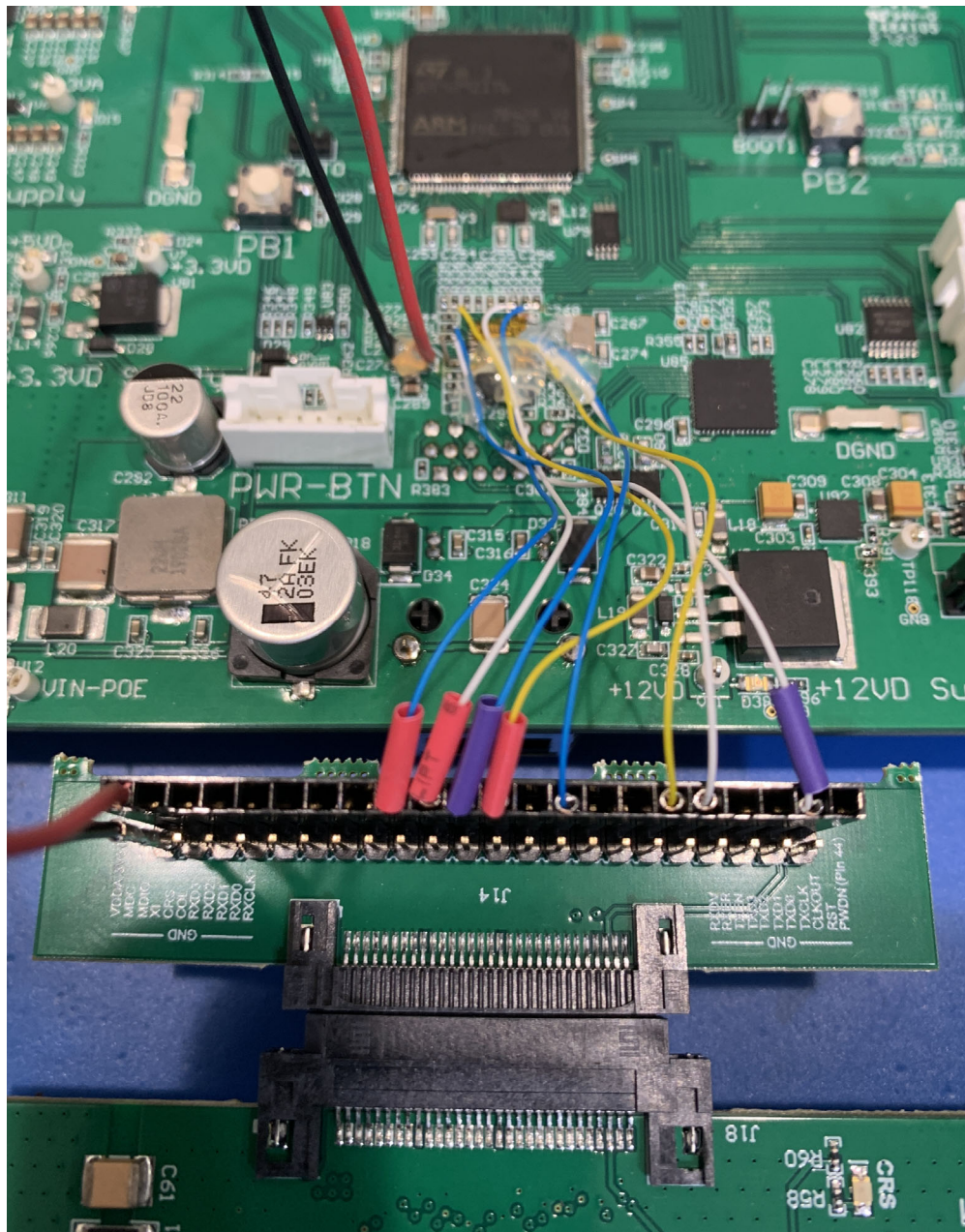
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AE-Main to DP83826EVM Connections

DP83826									
Pin #	Name	Strap	Function	AE Conx	J22 Pin	AE-Main Changes (Remove U84)	AE Connection	AE Wire	Config/Comment (Advanced Mode)
1	ModeSelect		Basic/Advanced Mode						Default EVM setting (open)
2	CEXT		External capacitor	N/A					
3	VDDA3V3			Power	2	From AE-Main	C276+	Red	Supplied from AE-Main
4	RD_M		Differential receive	N/A					
5	RD_P		Differential receive	N/A					
6	TD_M		Differential transmit	N/A					
7	TD_P		Differential transmit	N/A					
8	XO		Crystal output	N/A					
9	XI/50MHzIn		Crystal input	N/A					
10	RBIAS		Bias resistance	N/A					
11	MDIO		Management data I/O	N/A					
12	MDC		Management data clock	N/A					
13	RX_D3	Strap7	Receive data (MII)	N/A					RMII_CRS_DV (strap low) default is low
14	RX_D2	Strap8	Receive data (MII)	N/A					RMII mode (strap high) - add 2.49kΩ pull-up
15	RX_D1	Strap9	Receive data (RMII)	U84-7	18	Remove R341	R341-R342 pad/U84-7	Blue/Red	Auto-MDIX enable (strap low) default is low
16	RX_D0	Strap0	Receive data (RMII)	U84-8	20	Remove R340	R340-R339 pad/U84-8	White/Red	Auto-Negotiation enable (strap low) default is low
17	VDDIO			N/A					
18	RX_DV/CRS_DV	Strap10	Receive data valid	U84-11	24	Remove R335	R335-R336 pad/U84-11	Yellow/Red	Not Used (strap low) default is low
19	RX_CLK/50MHZ_RMII		50-MHz reference clock	U84-14	22		R351 pad/U84-14	Blue/Purple	50MHz Ref Clk output in RMII master mode
20	RX_ER (not used Nucleo)	Strap6	Receive Error	U84-10			N/C	N/A	CLKOUT on pin 31 (strap low) default is low
21	INT		Int/PwrDwn(default)	N/A					
22	TX_CLK	Strap5	MII transmit clock	N/A					RMII master mode (strap low) default is low
23	TX_EN		Transmit enable	U84-16	28		U84-16 pad	Blue	
24	TX_D0		Transmit data (RMII)	U84-17	36		U84-17 pad	White	
25	TX_D1		Transmit data (RMII)	U84-18	34		U84-18 pad	Yellow	
26	TX_D2		Transmit data (MII)	N/A					
27	TX_D3		Transmit data (MII)	N/A					
28	COL/LED_2/GPIO	Strap4	Collision detect	N/A					PHY_ADD2 (strap low) EVM pull-down
29	CRS/LED3	Strap3	Carrier detect	N/A					PHY_ADD1 (strap low) EVM pull-down
30	LEDO	Strap2	Link Status	N/A					PHY_ADD0 (strap low) EVM pull-down
31	CLKOUT/LED_1	Strap1	25 MHz/Transmit errors	N/A					Not Used
32	RST_N		Reset low	U84-15	42	Rework: use R353 as pull-down	R353 pad/U84-15	White/Purple	
33	PAD		GND	Power	Odd #s	From AE-Main/C276-		Black	

AE-Main to DP83826EVM Connections



DP83826 Configuration Straps

- Advanced Mode
 - ModeSelect(1): Open for advanced mode
 - RX_D3/Strap7(13): Open (low) for RMII_CRS_DV
 - RX_D2/Strap8(14): Pull high on EVM to VDDIO for RMII mode
 - RX_D1/Strap9(15): Open (low) for Auto-MDIX enable
 - RX_D0/Strap0(16): Open (low) for Auto-Negotiation enable
 - RX_DV/CRS_DV/Strap10(18): Open (low) – Not Used
 - RX_ER/Strap6(20): Open (low) – CLKOUT on pin 31
 - TX_CLK/Strap5(22): Open (low) – RMII master mode
 - LED2/Strap4(28): PHY_ADD2=0 (strap low) EVM pull-down
 - LED3/Strap4(29): PHY_ADD1=0 (strap low) EVM pull-down
 - LED0/Strap4(30): PHY_ADD0=0 (strap low) EVM pull-down
 - CLKOUT/LED1/Strap1(31): Not used

