

Check again

### Change History

Voltage Rails	ON S0-S1	ON S3	ON S4	ON S5	Control signal
12VOUT	X	X	X	X	
3V_591	X	X	X	X	
5VPCU	X	X	X	X	
+3V_S5	X	X	X	X	S5_ON
3V_LAN	X	X	X	X	
+1.5V_S5	X	X	X	X	S5_ON
+1.8VSUS	X	X			SUS_ON
+3VSUS	X	X			SUS_D
+5VSUS	X	X			SUS_D
SMDDR_VTERM DDR Termination voltage	X	X			MAIN_ON
SMDDR_VREF	X				MAIN_ON
VGA_PCIE_1.2V	X				MAIN_ON
VCC_CORE Core voltage for Processor	X				VR_ON
+VCCP 1.05V rail for Processor I/O	X				MAIN_ON
+1.5V	X				MAIN_ON
+1.8V	X				MAIN_D
+2.5V	X				MAIN_D
+3V	X				MAIN_D
+5V					MAIN_D
+12V	X				MAIN_ON
+3VRUN	X				PCI Switch Power_ON
+5VRUN	X				PCI Switch Power_ON

5/28

- 1.System DVI DET function move in EZ port , So Del Q47,R557
  - 2.Addition AND gate for DOCKING Power Good AND DockingIN Singal combine Circuit
  - 3.Addition Power led circuit for system
  - 4.Change D34 AND D35 + -
  - 5.Addition LID Switch and LID connector
  - 6.Addition RC Delay for PCIE1.2V
  - 7.Change EC Three GPIO port same to ZL2
- 5/31
- 1.Change C145 PCB Footprint to 3528
  - 2.Combine USB and bluetooth connector to 19pin connector 87212-1900
  - 3.Change PCBFootprint 88216-1200 to 88213-1200
  - 4.Change USB connector bypass C to 0805 10u
  - 5.Adujst 80pin connector 3 singal
- 6/1
- 1.Update power all circuit for GND name
  - 2.Addition OR to PRST
  - 3.Change IDE RST

6/2

- 1.Change ICH-6 USB Port
- 2.Del CDR,CDL,CDGND Singal and DEL prevent CDR,CDL,CDGND noise circuit

6/4

- 1.U49,U50, Form 3VRUN change to +3V AND CHANGE MINPCI connector to PCI BUS,And addition PCI\_SWRST # AND PCI\_SWRST1#
- 2.Change BT\_POWER NAME
- 3.Change VOIP AGND

6/7

- 1.Change VOIP AGND TO AGND2 for Layout

### External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts
CardBus+Smart Card	AD25	1	PIRQC/B
Mini-PCI	AD19	2	PIRQB/D
LAN	AD22	0	PIRQA
1394	AD23	3	PIRQD

### EC SM Bus1 address

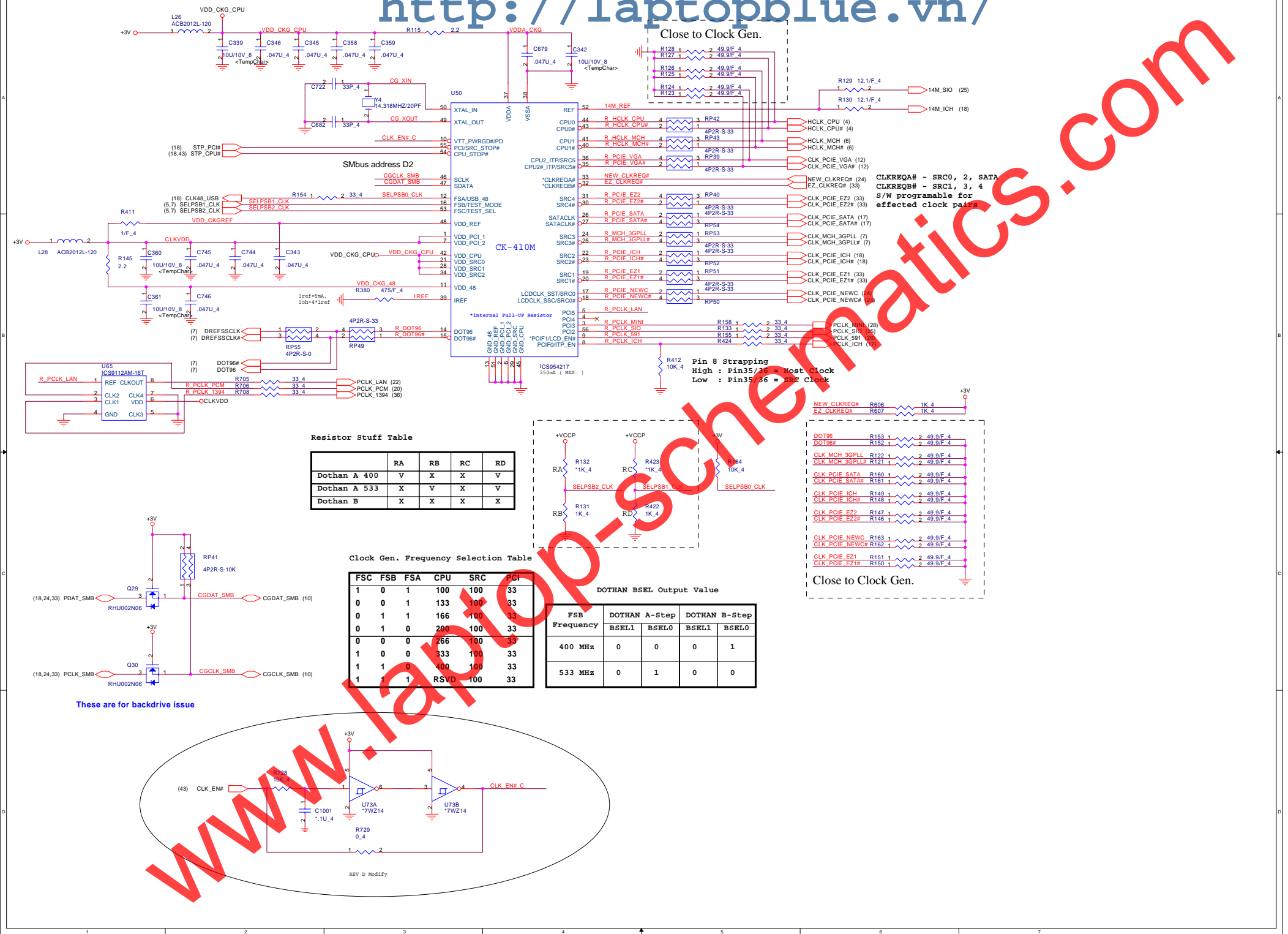
#### Device

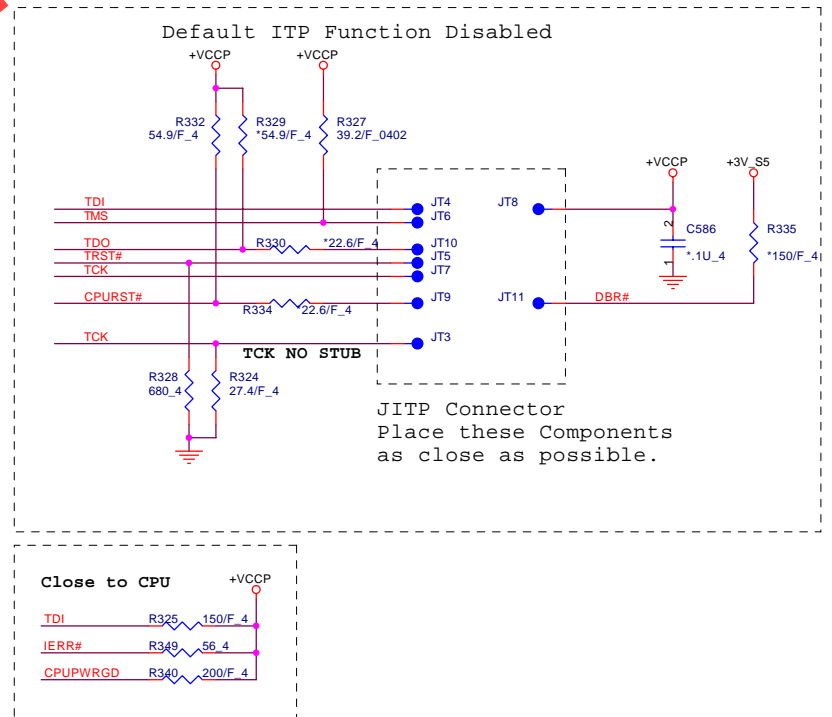
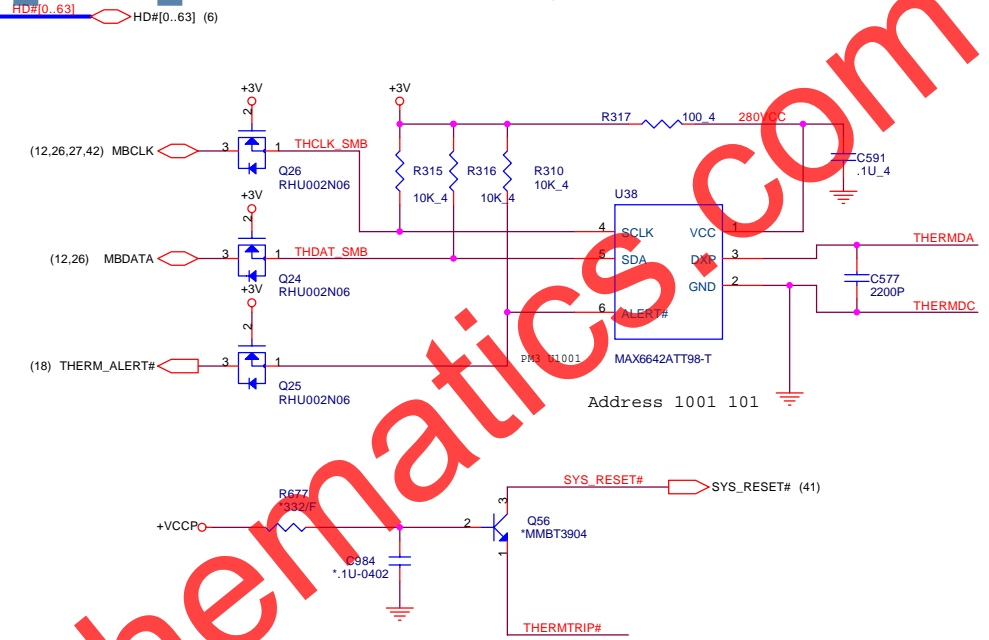
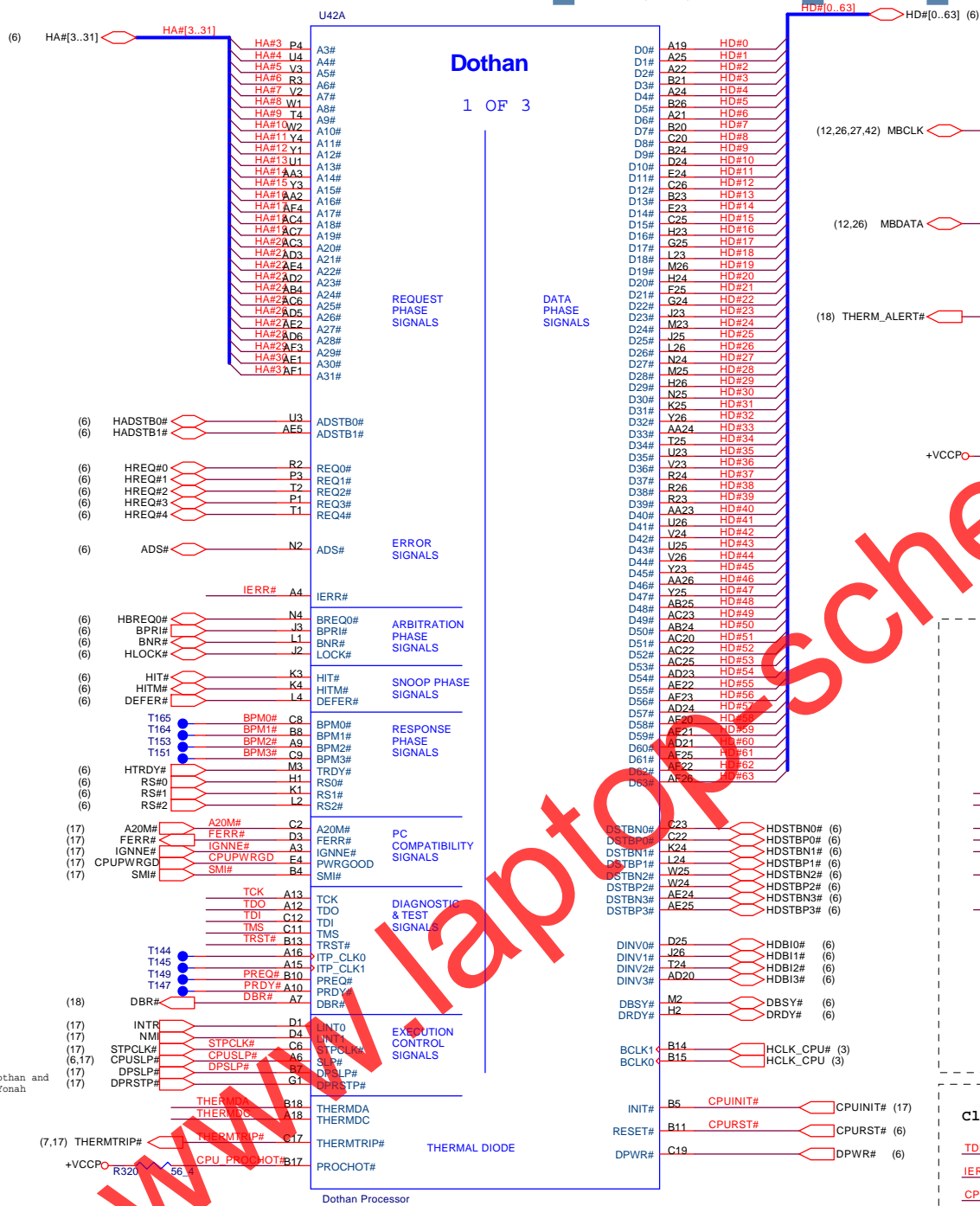
Smart Battery  
THERMAL SENSOR  
LIGHT SENER  
VOIP FLASH ROM

### ICH6-M SM Bus address

#### Device

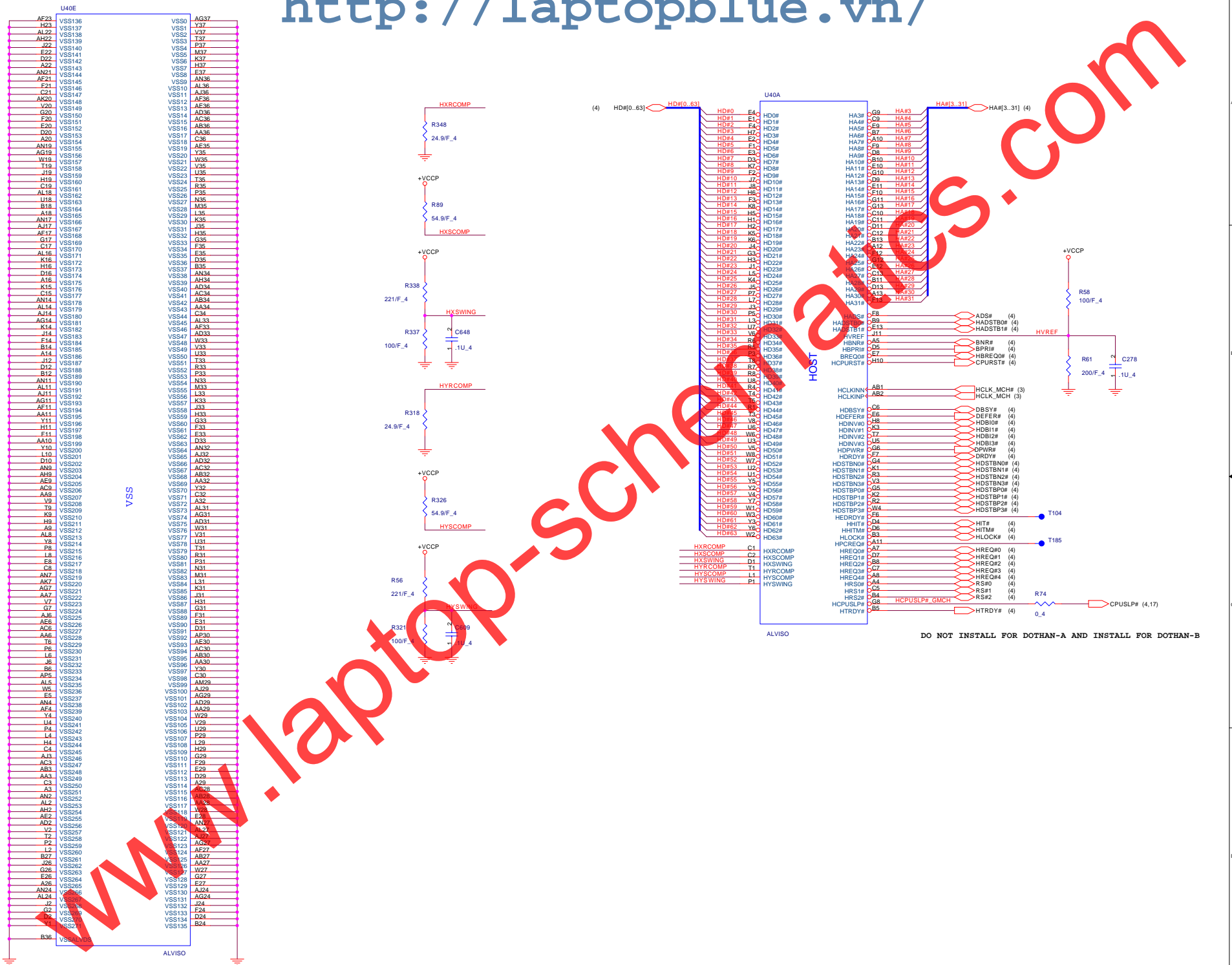
SODIMM 1010 000X b  
Clock Gen 1101 001x b



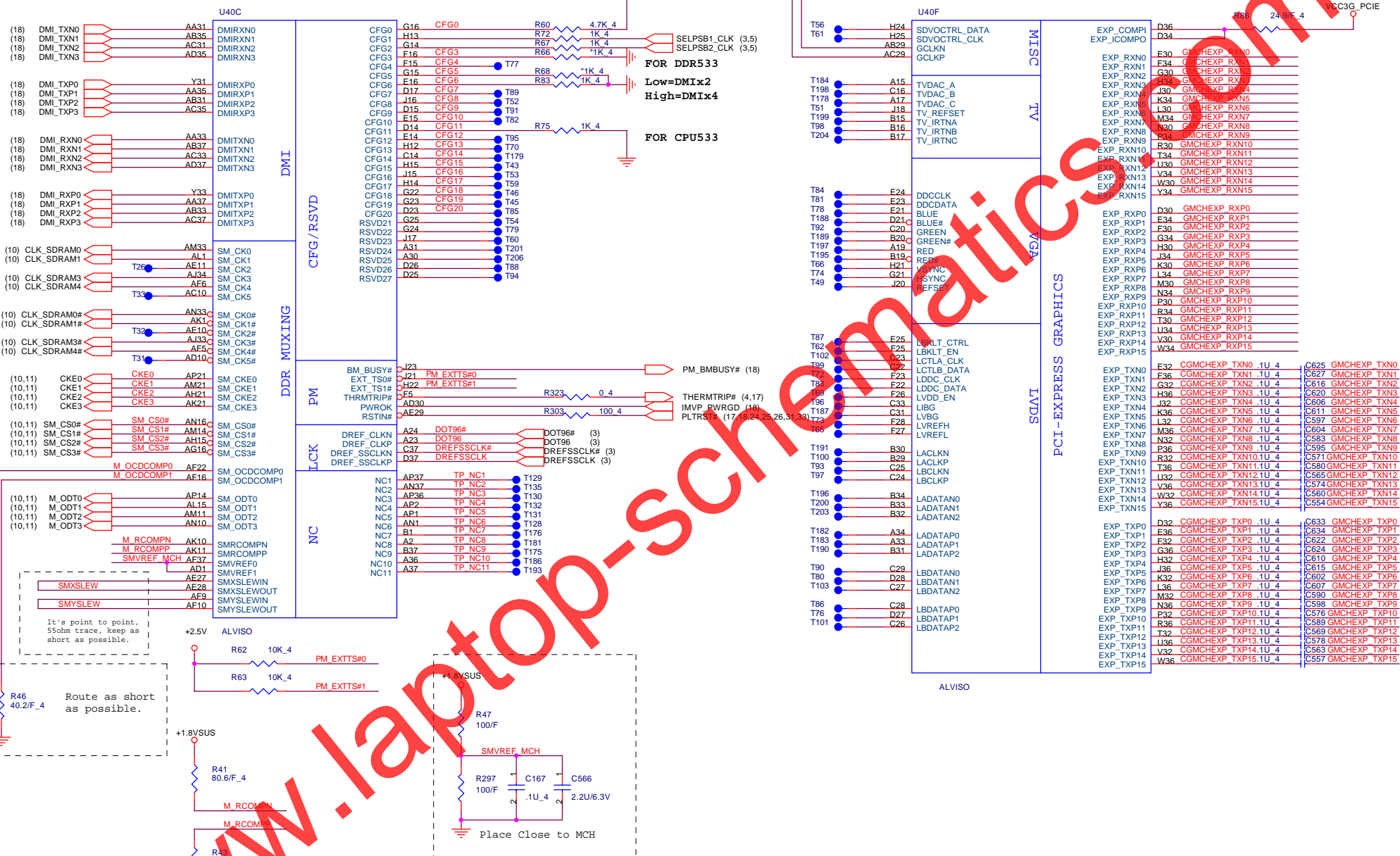


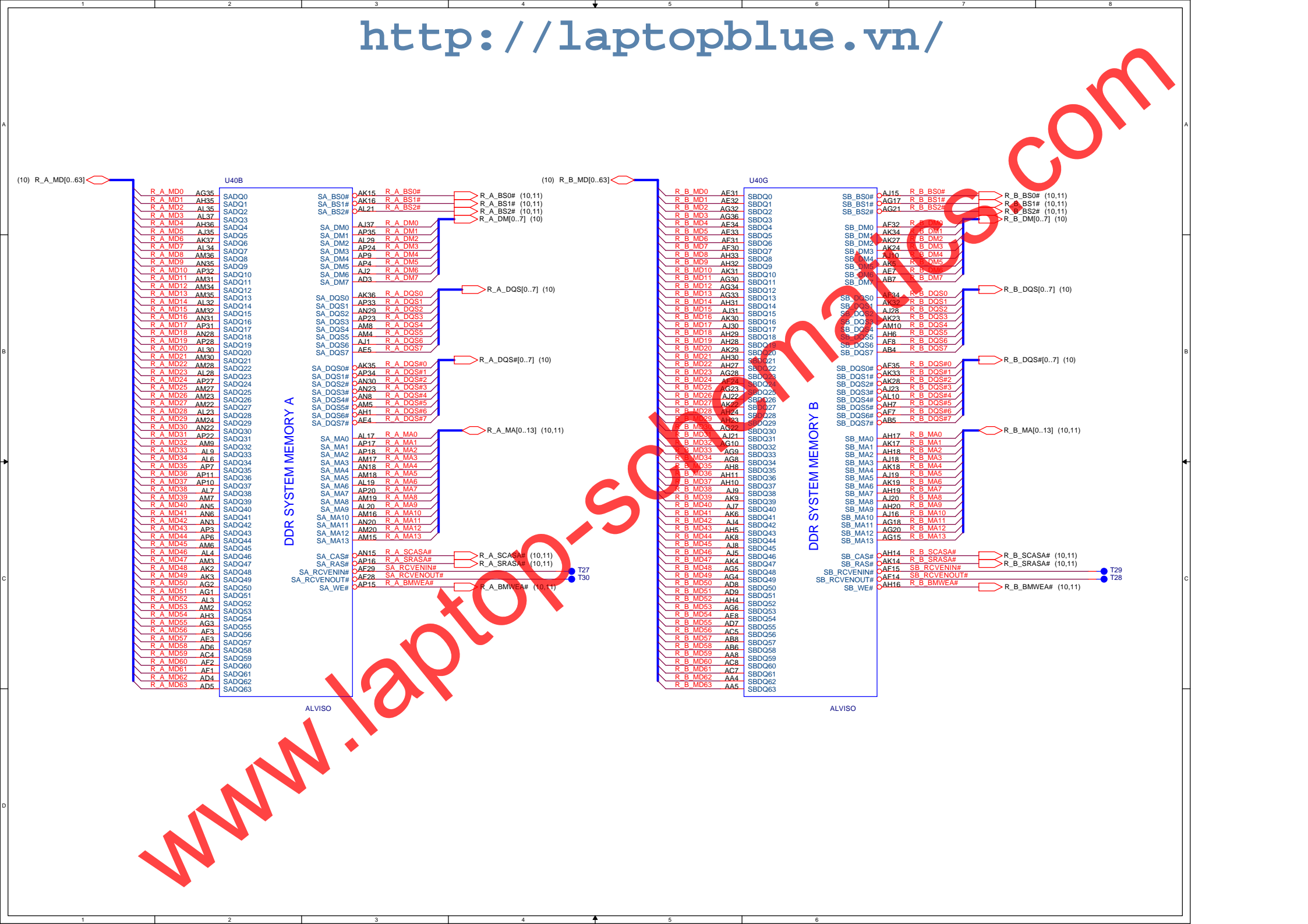


<http://laptopblue.vn/>

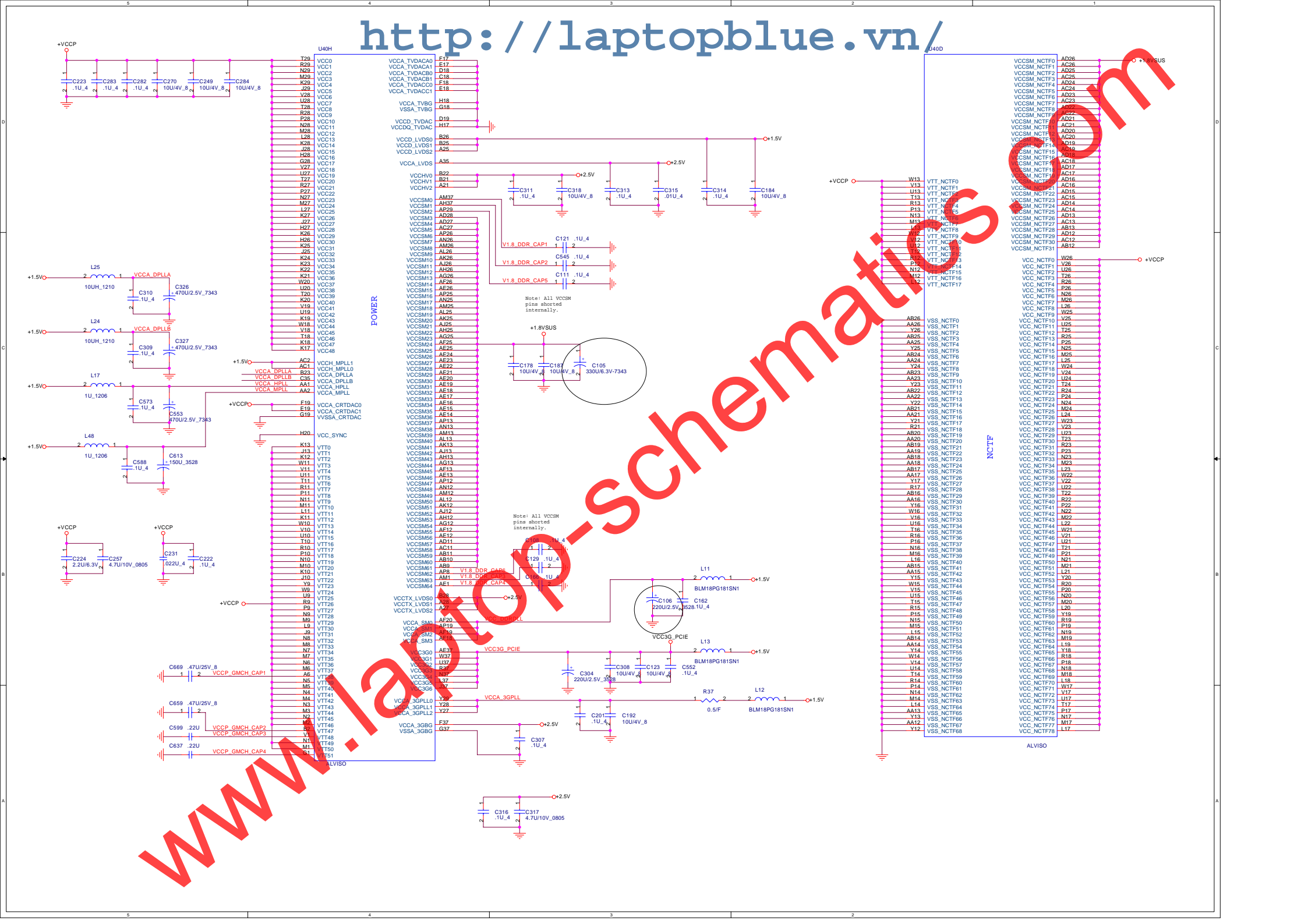


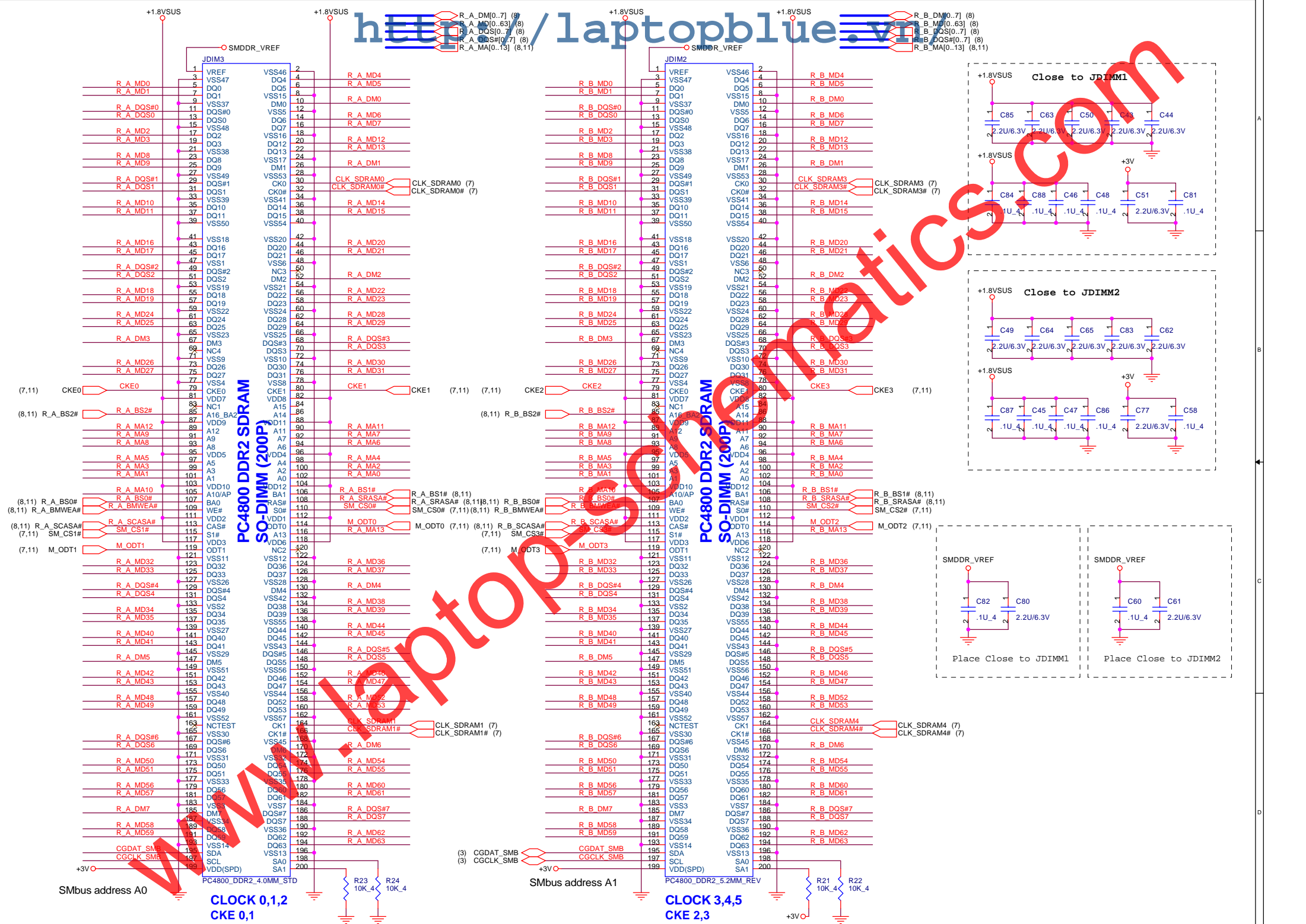




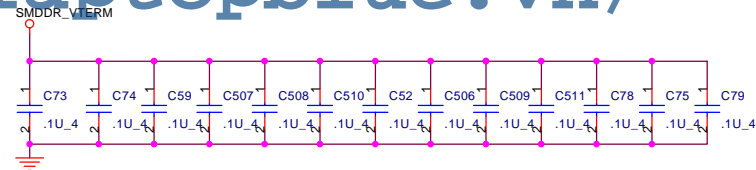




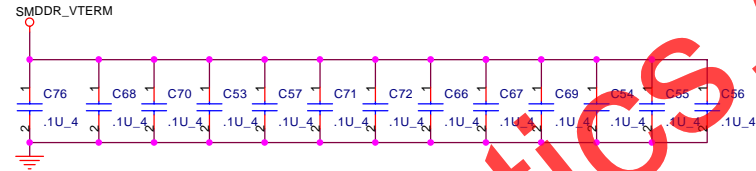




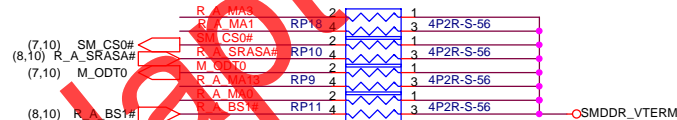
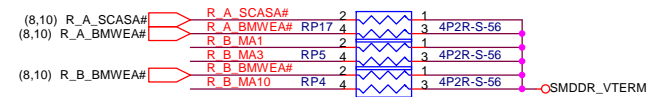
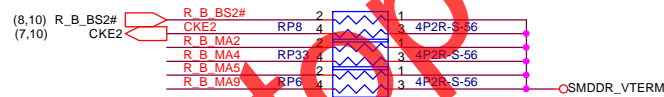
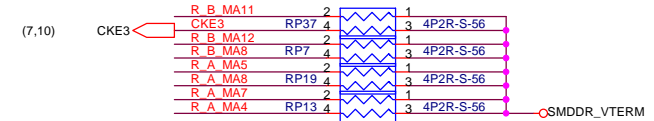
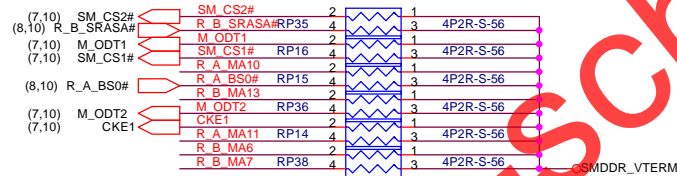
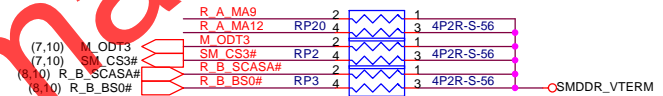
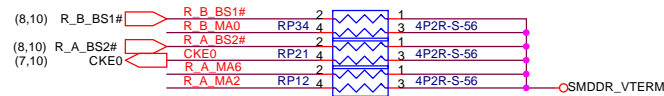
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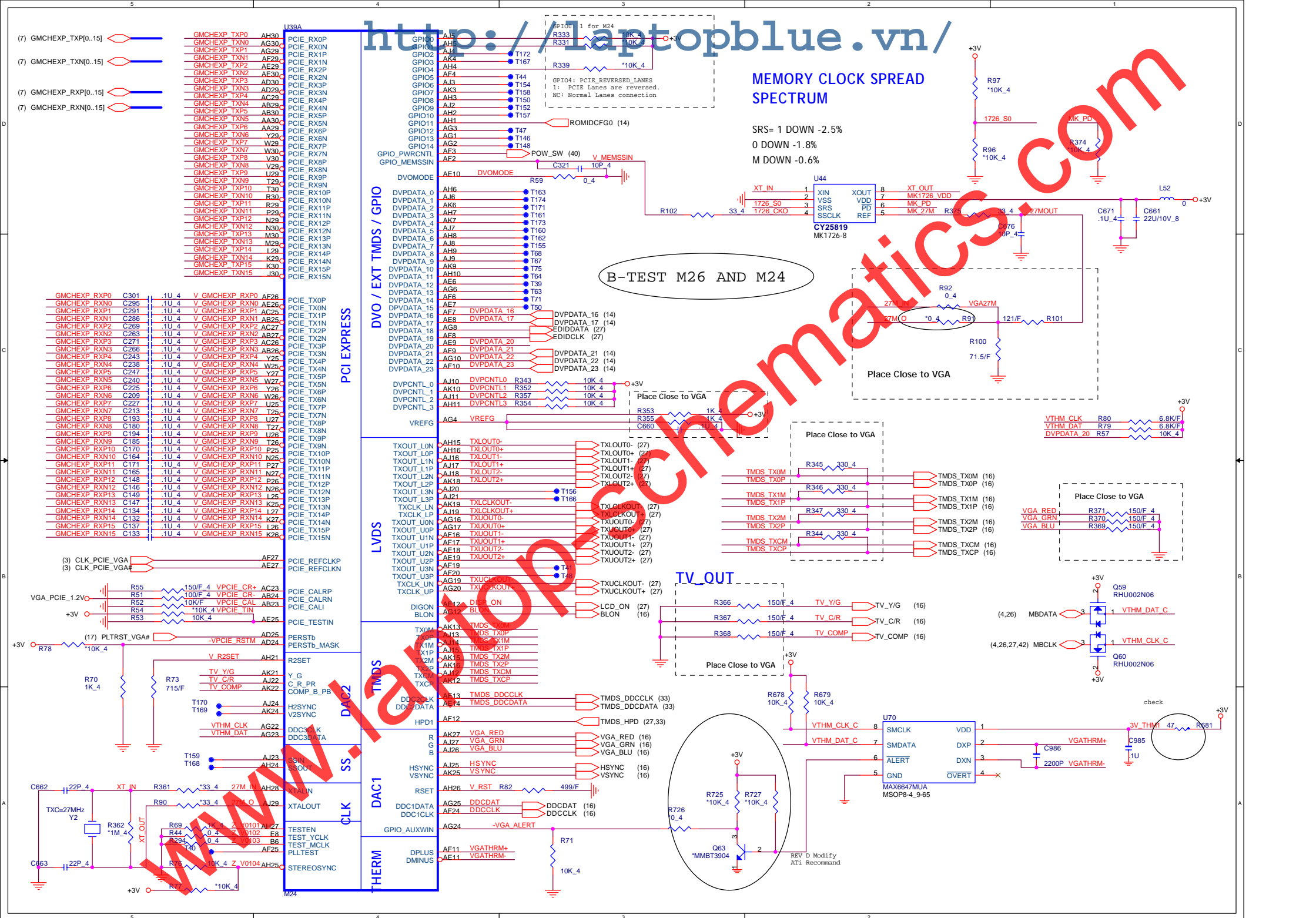


Layout note: Place one cap close to every 2 pullup resistors terminated to SMDR\_VTERM

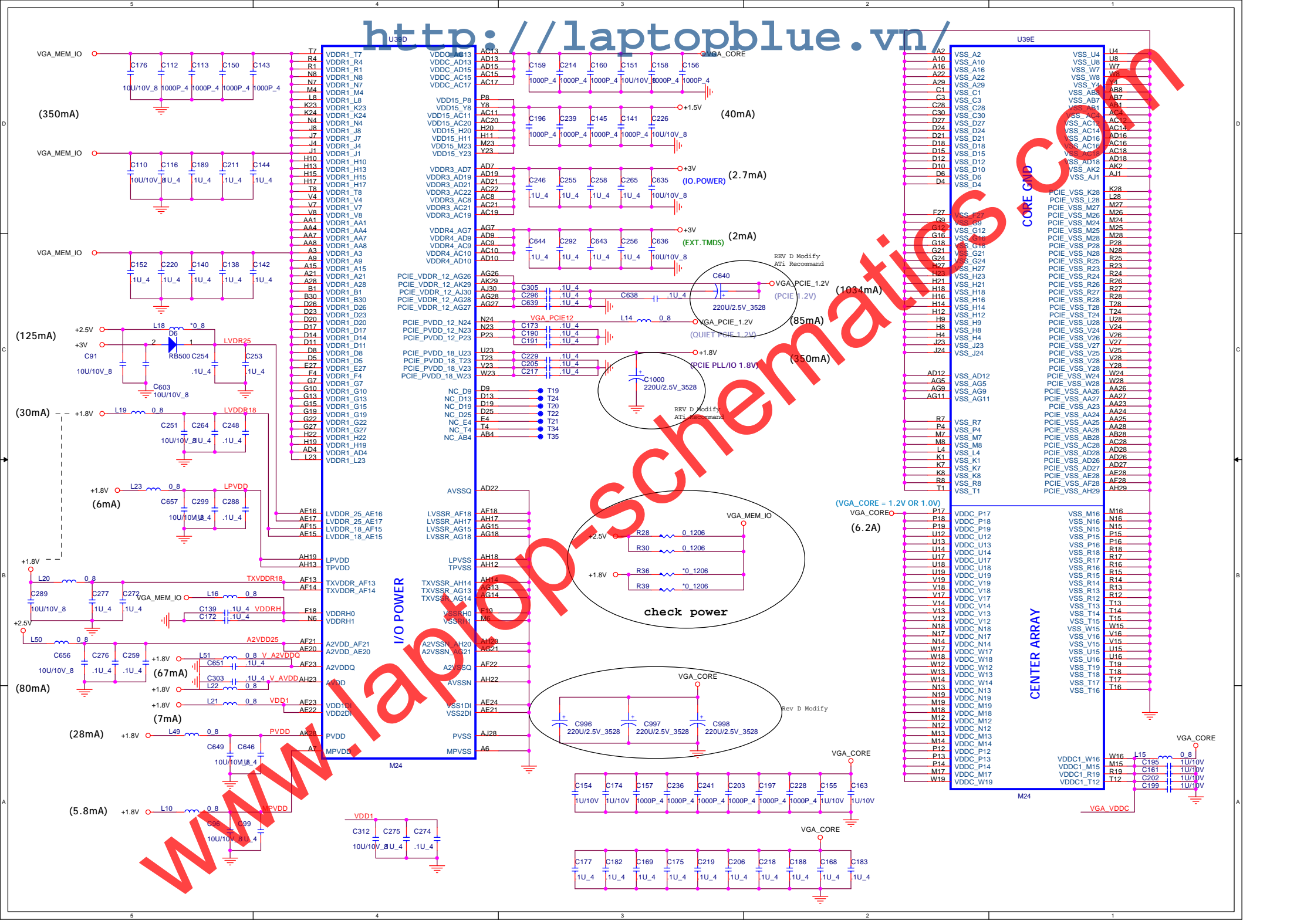


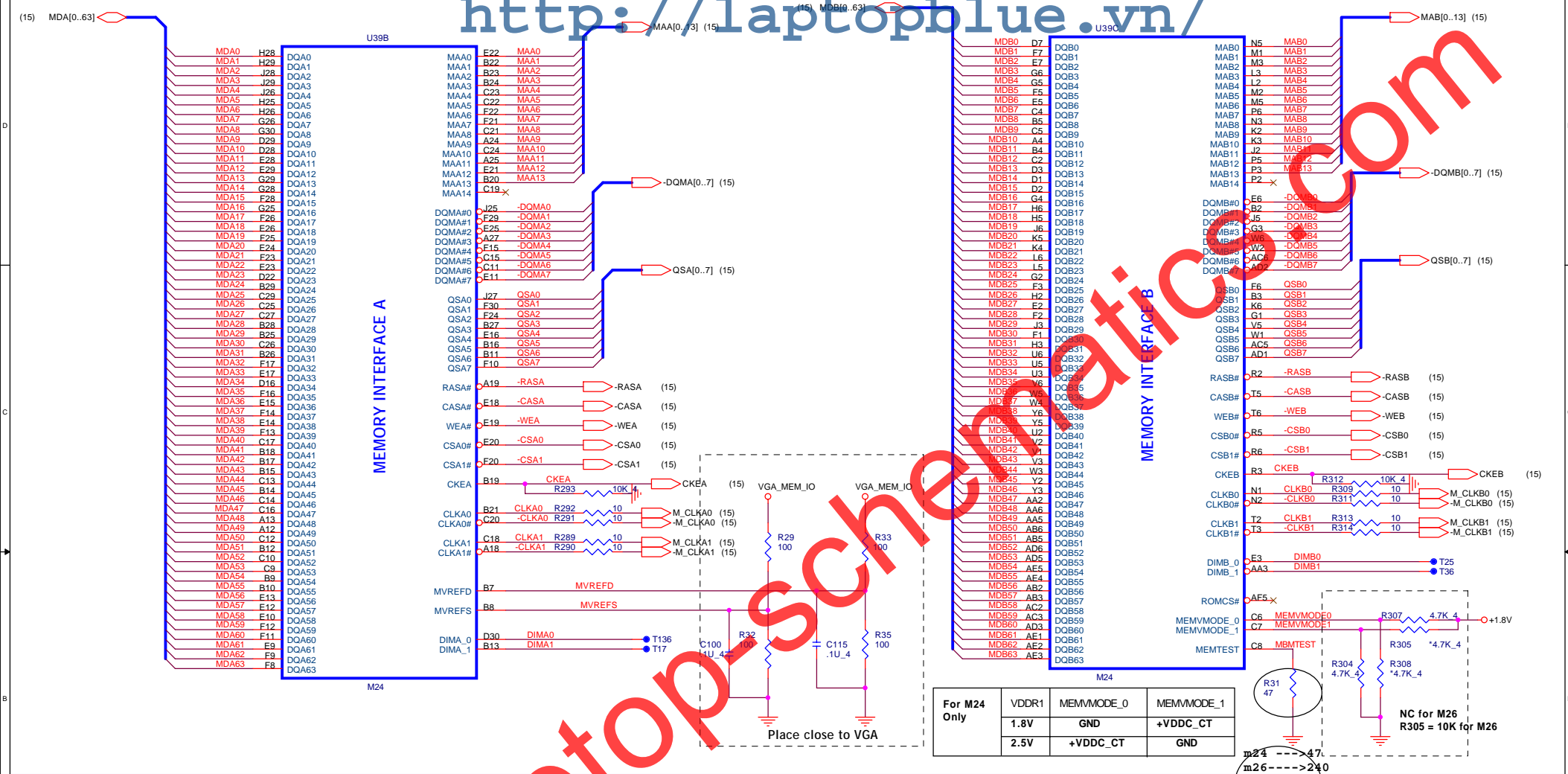
Layout note: Place one cap close to every 2 pullup resistors terminated to SMDR\_VTERM





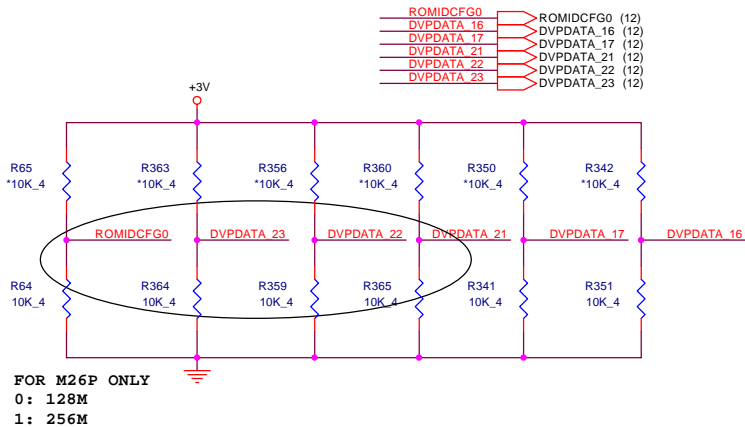






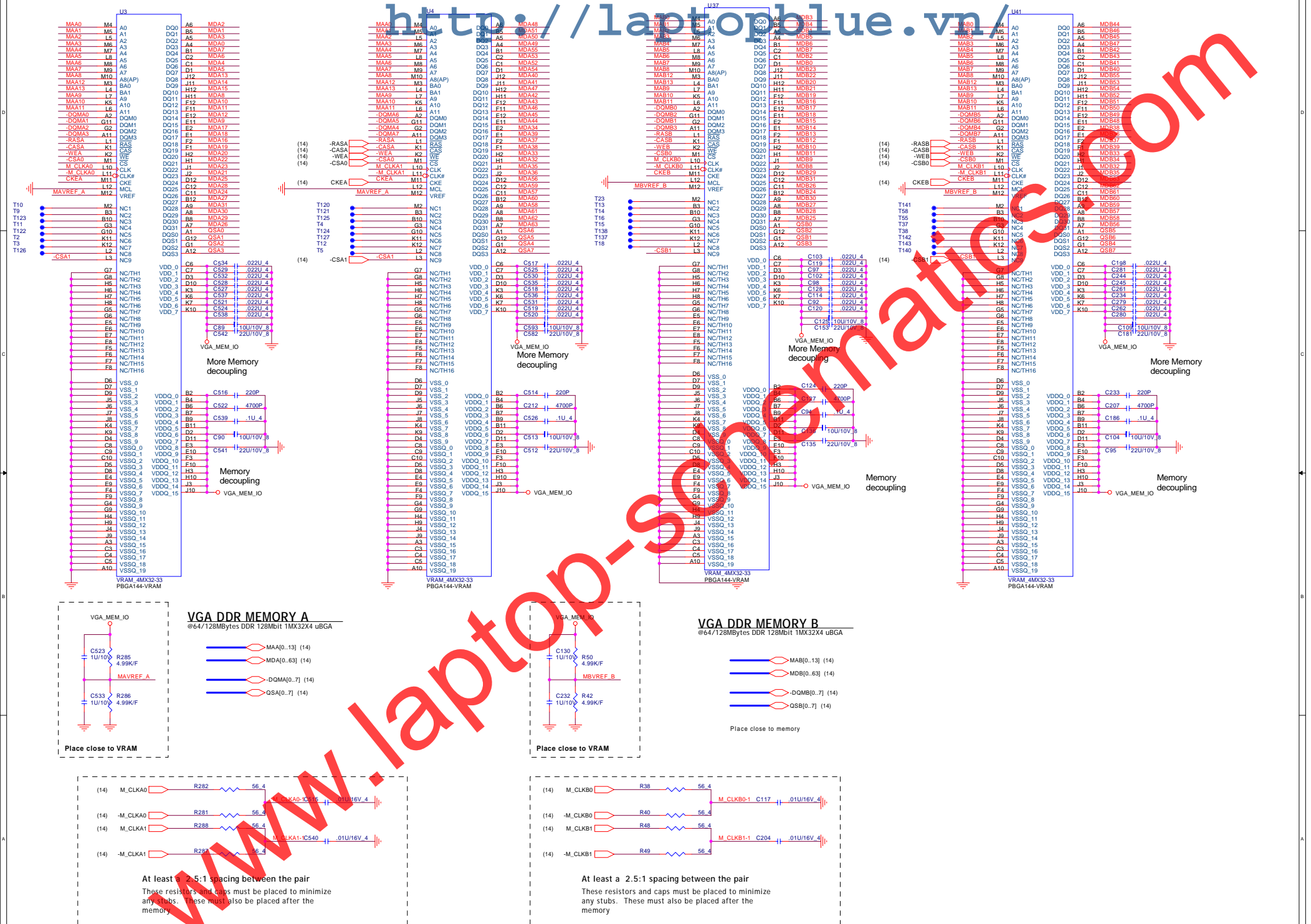
## STRAPS PIN

GPIO(9,13:11) INT P/D	ROMIDCFG
	0x0x: No ROM, CHG_ID=0
	0x1x: No Rom, CHG_ID=1
	1000: Parallel ROM, Chip ID'S from ROM
	1000: Parallel ROM, Chip ID'S from ROM
DVPDATA_21-23 MEM TYPE	DVPDATA_21: 0-4Mx32 1=8Mx32 DVPDATA_22: 0-128M 1=64M DVPDATA_23: 0=Hynix 1=Samsung



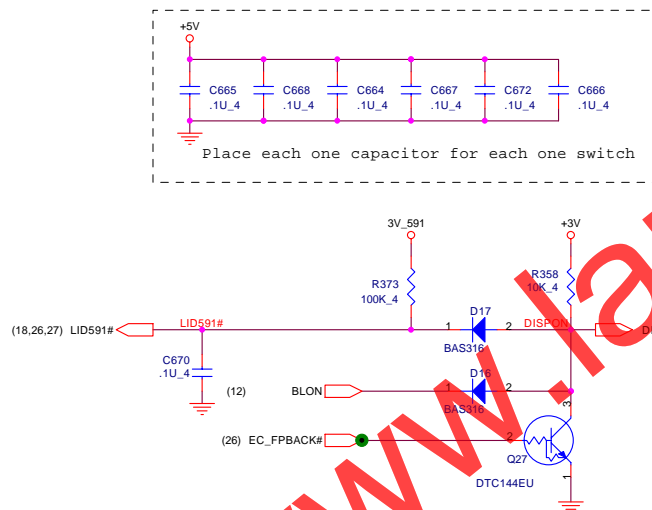
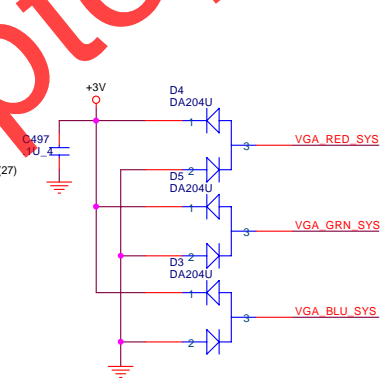
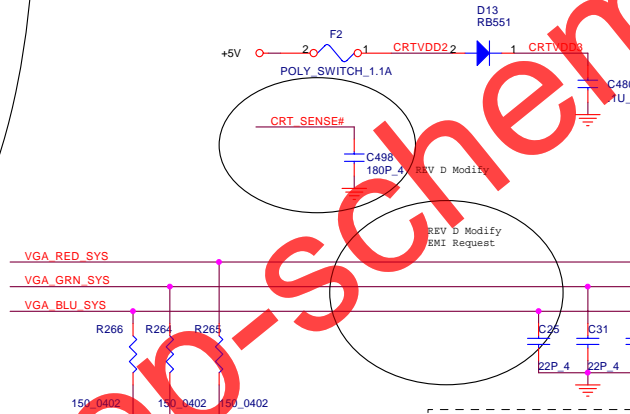
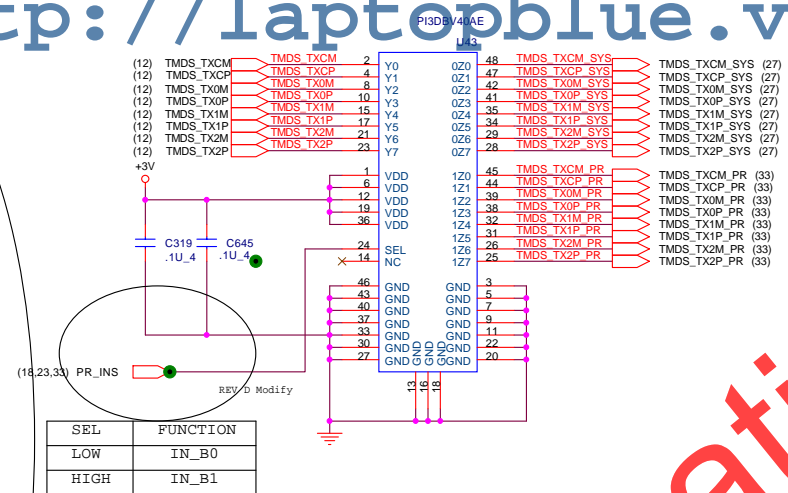
FOR M26P ONLY  
0: 128M  
1: 256M

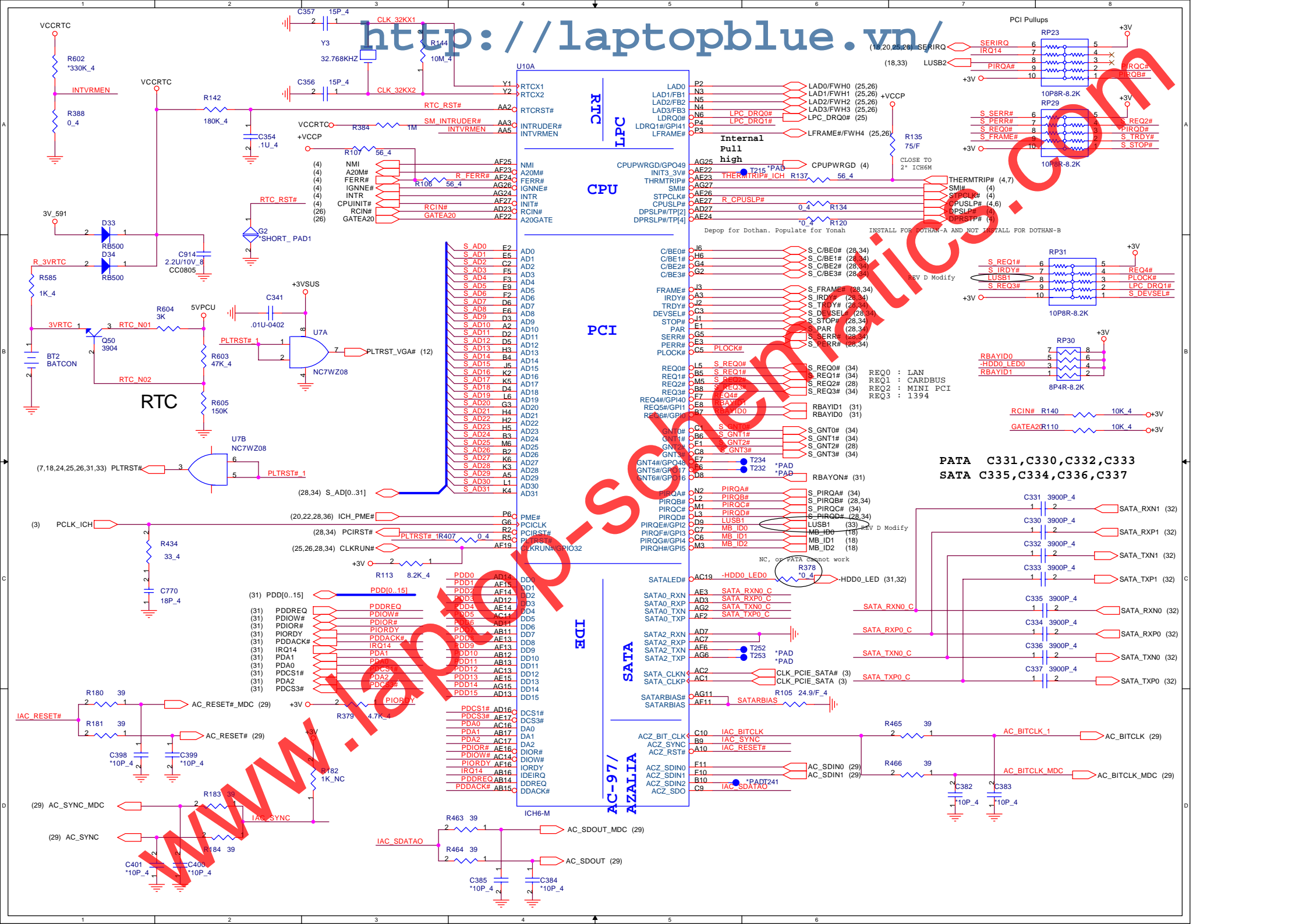


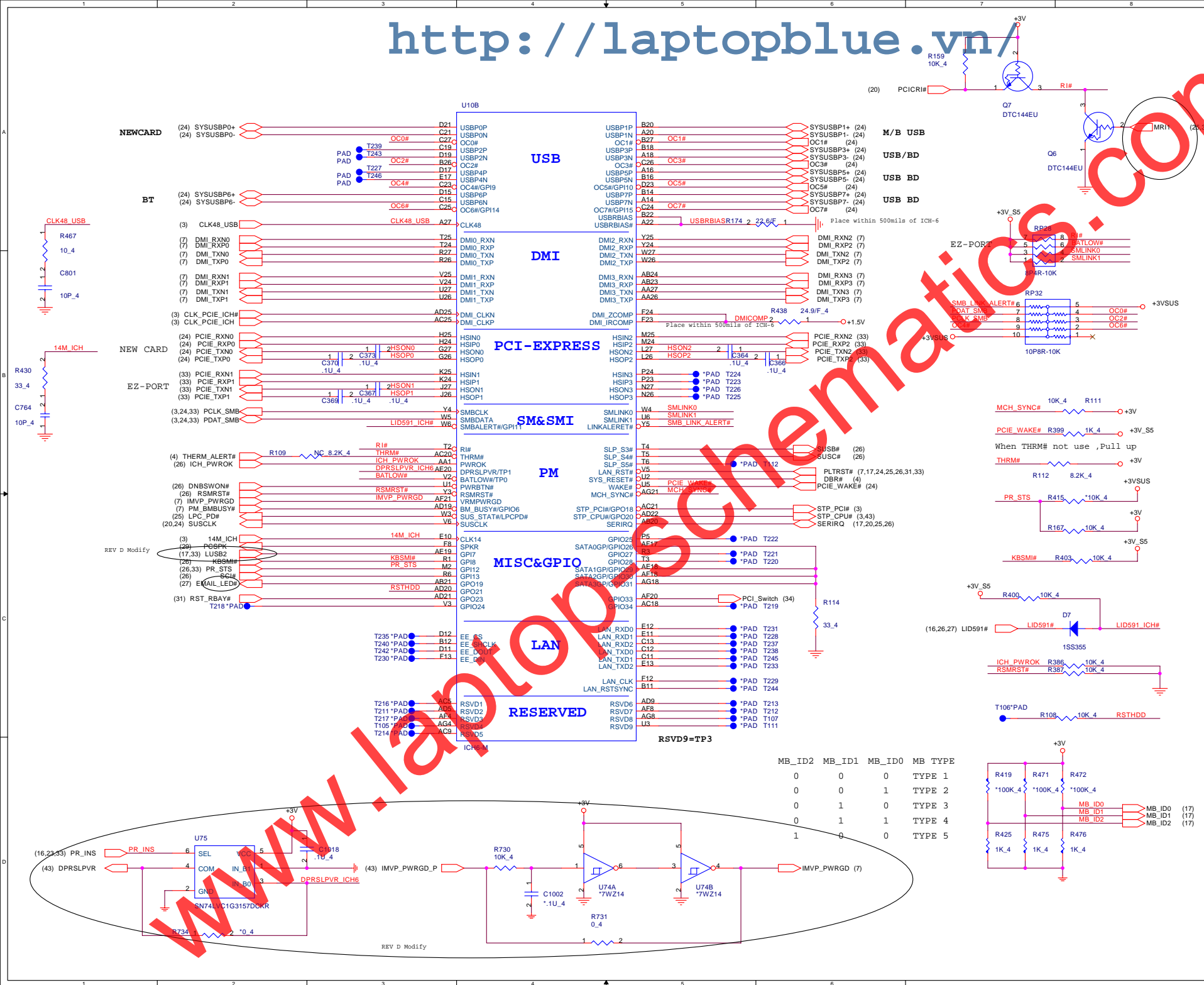


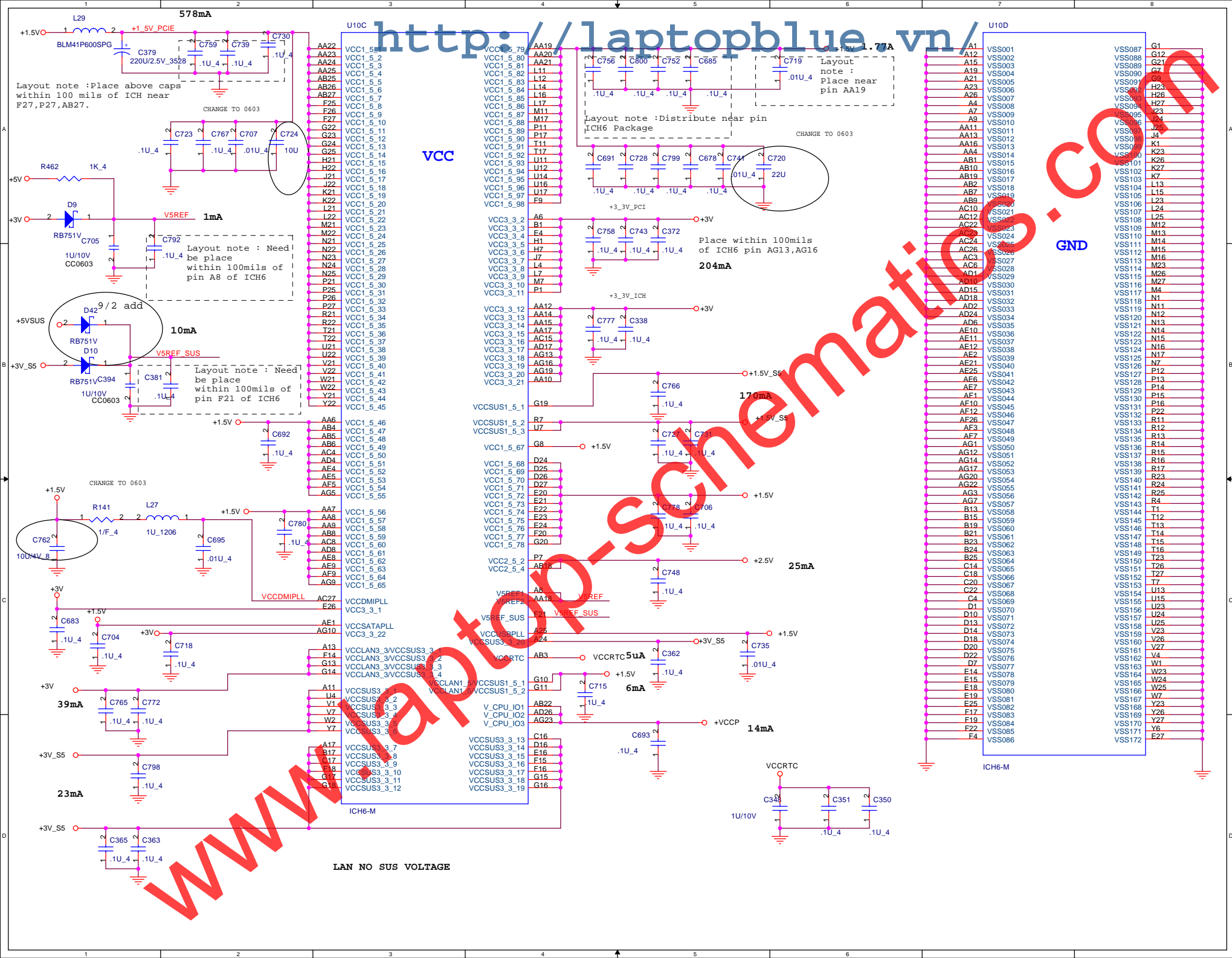
The schematic diagram illustrates the internal circuitry of a laptop, focusing on the power management and signal processing sections. Key components and their connections include:

- Capacitors:** Numerous capacitors are shown, including electrolytic capacitors (e.g., C665, C666, C667, C668, C672) and ceramic capacitors (e.g., C25, C31, C35, C37, C495, C496, C497, C498, C499, C500, C501, C502, C503, C504, C505, C506, C507, C508, C509, C510, C511, C512, C513, C514, C515, C516, C517, C518, C519, C520, C521, C522, C523, C524, C525, C526, C527, C528, C529, C530, C531, C532, C533, C534, C535, C536, C537, C538, C539, C540, C541, C542, C543, C544, C545, C546, C547, C548, C549, C550, C551, C552, C553, C554, C555, C556, C557, C558, C559, C560, C561, C562, C563, C564, C565, C566, C567, C568, C569, C570, C571, C572, C573, C574, C575, C576, C577, C578, C579, C580, C581, C582, C583, C584, C585, C586, C587, C588, C589, C590, C591, C592, C593, C594, C595, C596, C597, C598, C599, C600, C601, C602, C603, C604, C605, C606, C607, C608, C609, C610, C611, C612, C613, C614, C615, C616, C617, C618, C619, C620, C621, C622, C623, C624, C625, C626, C627, C628, C629, C630, C631, C632, C633, C634, C635, C636, C637, C638, C639, C640, C641, C642, C643, C644, C645, C646, C647, C648, C649, C650, C651, C652, C653, C654, C655, C656, C657, C658, C659, C660, C661, C662, C663, C664, C665, C666, C667, C668, C669, C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, C680, C681, C682, C683, C684, C685, C686, C687, C688, C689, C690, C691, C692, C693, C694, C695, C696, C697, C698, C699, C700, C701, C702, C703, C704, C705, C706, C707, C708, C709, C710, C711, C712, C713, C714, C715, C716, C717, C718, C719, C720, C721, C722, C723, C724, C725, C726, C727, C728, C729, C730, C731, C732, C733, C734, C735, C736, C737, C738, C739, C740, C741, C742, C743, C744, C745, C746, C747, C748, C749, C750, C751, C752, C753, C754, C755, C756, C757, C758, C759, C760, C761, C762, C763, C764, C765, C766, C767, C768, C769, C770, C771, C772, C773, C774, C775, C776, C777, C778, C779, C780, C781, C782, C783, C784, C785, C786, C787, C788, C789, C790, C791, C792, C793, C794, C795, C796, C797, C798, C799, C800, C801, C802, C803, C804, C805, C806, C807, C808, C809, C810, C811, C812, C813, C814, C815, C816, C817, C818, C819, C820, C821, C822, C823, C824, C825, C826, C827, C828, C829, C830, C831, C832, C833, C834, C835, C836, C837, C838, C839, C840, C841, C842, C843, C844, C845, C846, C847, C848, C849, C850, C851, C852, C853, C854, C855, C856, C857, C858, C859, C860, C861, C862, C863, C864, C865, C866, C867, C868, C869, C870, C871, C872, C873, C874, C875, C876, C877, C878, C879, C880, C881, C882, C883, C884, C885, C886, C887, C888, C889, C890, C891, C892, C893, C894, C895, C896, C897, C898, C899, C900, C901, C902, C903, C904, C905, C906, C907, C908, C909, C910, C911, C912, C913, C914, C915, C916, C917, C918, C919, C920, C921, C922, C923, C924, C925, C926, C927, C928, C929, C930, C931, C932, C933, C934, C935, C936, C937, C938, C939, C940, C941, C942, C943, C944, C945, C946, C947, C948, C949, C950, C951, C952, C953, C954, C955, C956, C957, C958, C959, C960, C961, C962, C963, C964, C965, C966, C967, C968, C969, C970, C971, C972, C973, C974, C975, C976, C977, C978, C979, C980, C981, C982, C983, C984, C985, C986, C987, C988, C989, C990, C991, C992, C993, C994, C995, C996, C997, C998, C999, C1000).
- Resistors:** Various resistors are used for signal conditioning and biasing, including R266, R267, R268, R269, R270, R271, R272, R273, R274, R275, R276, R277, R278, R279, R280, R281, R282, R283, R284, R285, R286, R287, R288, R289, R290, R291, R292, R293, R294, R295, R296, R297, R298, R299, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R313, R314, R315, R316, R317, R318, R319, R320, R321, R322, R323, R324, R325, R326, R327, R328, R329, R330, R331, R332, R333, R334, R335, R336, R337, R338, R339, R340, R341, R342, R343, R344, R345, R346, R347, R348, R349, R350, R351, R352, R353, R354, R355, R356, R357, R358, R359, R360, R361, R362, R363, R364, R365, R366, R367, R368, R369, R370, R371, R372, R373, R374, R375, R376, R377, R378, R379, R380, R381, R382, R383, R384, R385, R386, R387, R388, R389, R390, R391, R392, R393, R394, R395, R396, R397, R398, R399, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R420, R421, R422, R423, R424, R425, R426, R427, R428, R429, R430, R431, R432, R433, R434, R435, R436, R437, R438, R439, R440, R441, R442, R443, R444, R445, R446, R447, R448, R449, R450, R451, R452, R453, R454, R455, R456, R457, R458, R459, R460, R461, R462, R463, R464, R465, R466, R467, R468, R469, R470, R471, R472, R473, R474, R475, R476, R477, R478, R479, R480, R481, R482, R483, R484, R485, R486, R487, R488, R489, R490, R491, R492, R493, R494, R495, R496, R497, R498, R499, R500, R501, R502, R503, R504, R505, R506, R507, R508, R509, R510, R511, R512, R513, R514, R515, R516, R517, R518, R519, R520, R521, R522, R523, R524, R525, R526, R527, R528, R529, R530, R531, R532, R533, R534, R535, R536, R537, R538,

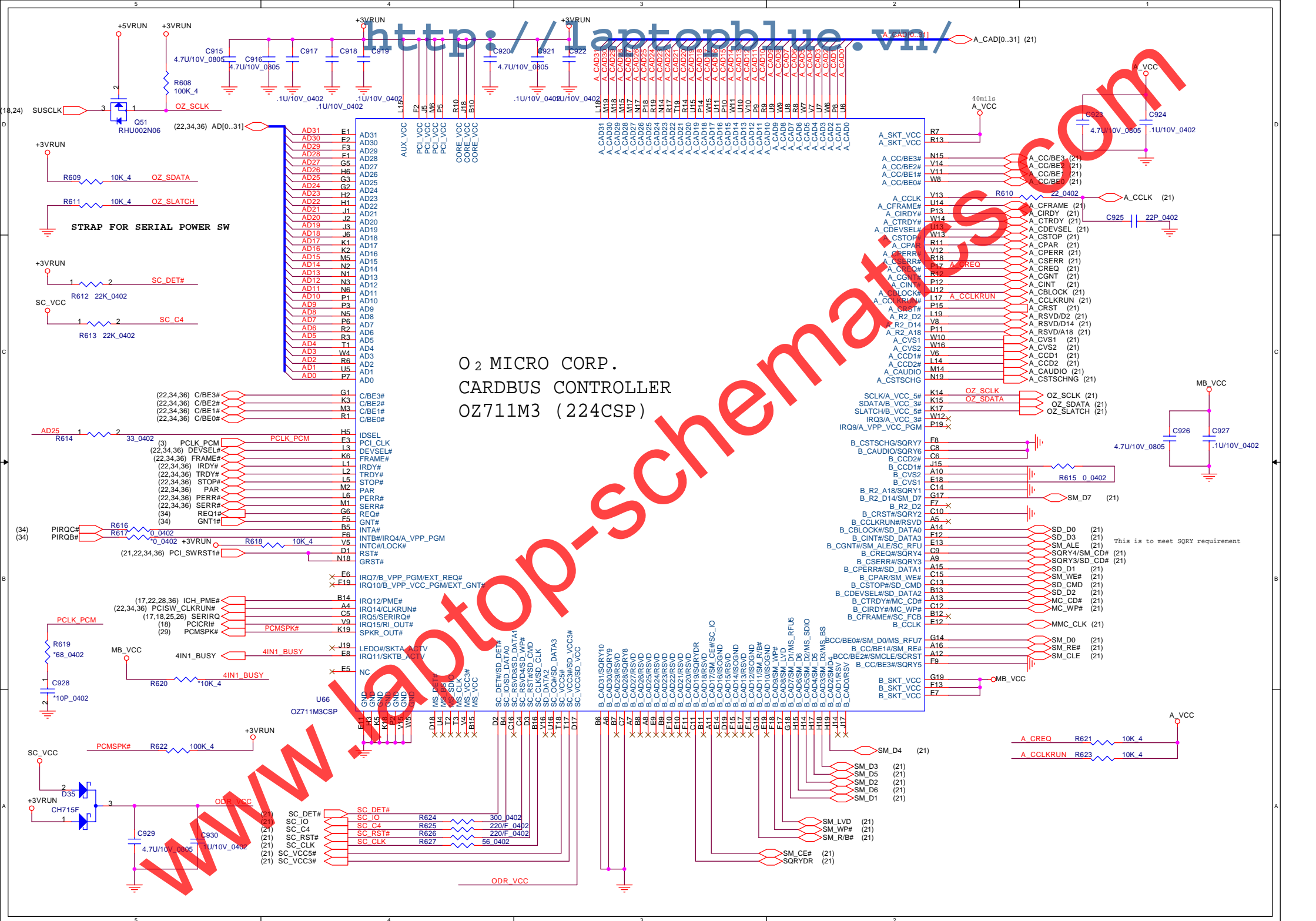






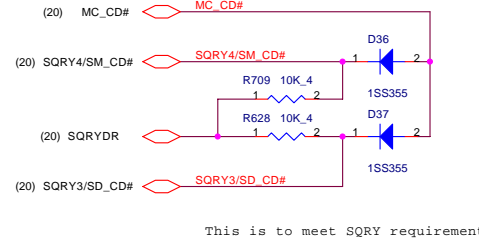




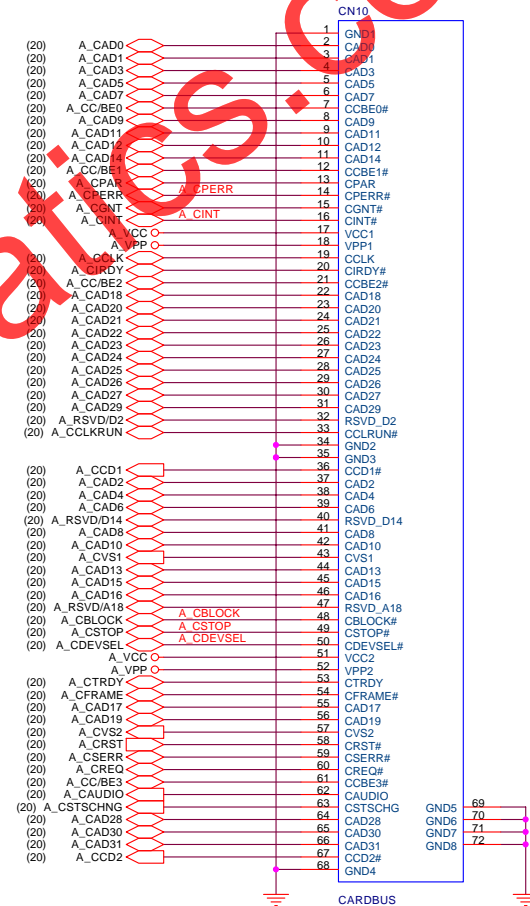


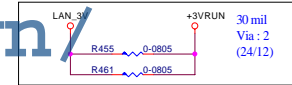


The schematic diagram illustrates the electrical connections between the SM-10000 module and the SC-10000 module. The SM module provides several digital signals: SM\_D3, SM\_D4, SM\_D5, and SM\_D6, which are connected to the SC module's C4, CLK, RST#, and VCC pins respectively. A low-voltage detect signal (SM\_LVD) is connected to the SC\_DET# pin. Control signals SM\_CLE and SM\_ALE are connected to the SC\_C4 and SC\_CLK pins. The SM\_D0 signal is connected to the SC\_IO pin. The SC module's NC, C8, C7, C6, C5, SW-GND, NC, SW-CD, C1, C2, C3, and C4 pins are also shown, along with the SC\_CONF pin. The circuit includes a 2N7002 MOSFET (Q55) and two 1SS355 diodes (D38, D39) for signal conditioning and protection.

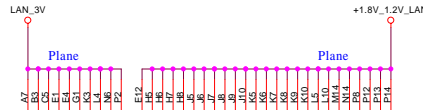


4 IN1 CARD READER  
(XD,MMC/SD,MS)





FOR 5788M(GIGA) USE

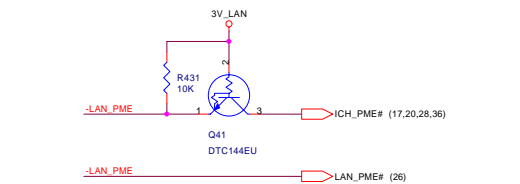
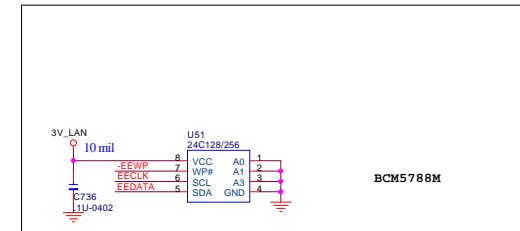
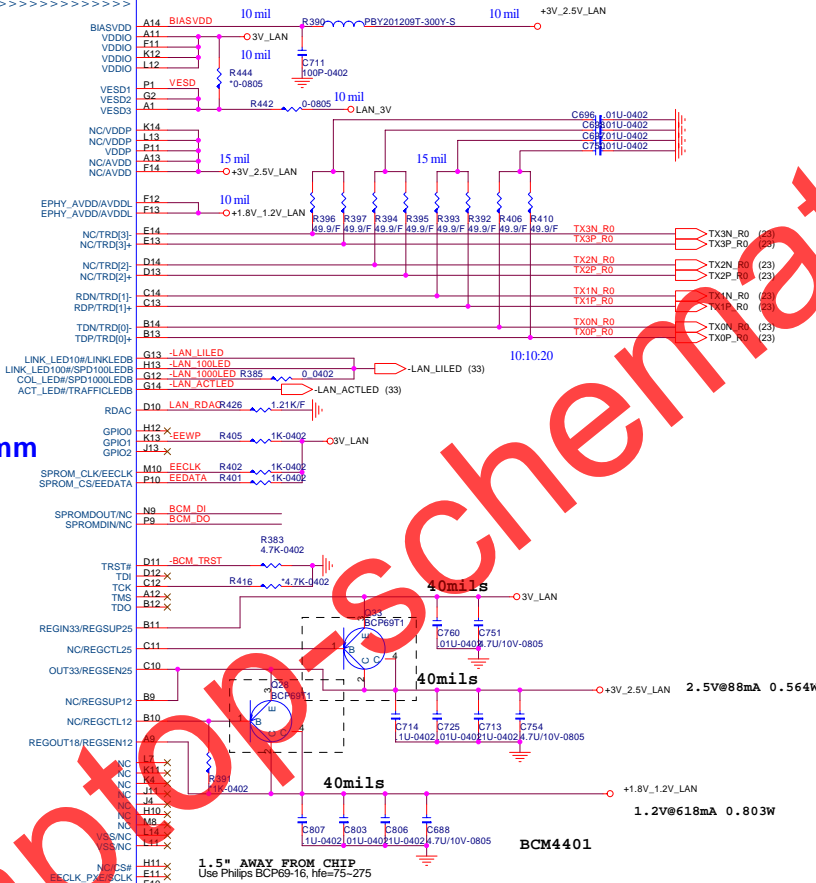


BCM5788M

BCM5788M LAN

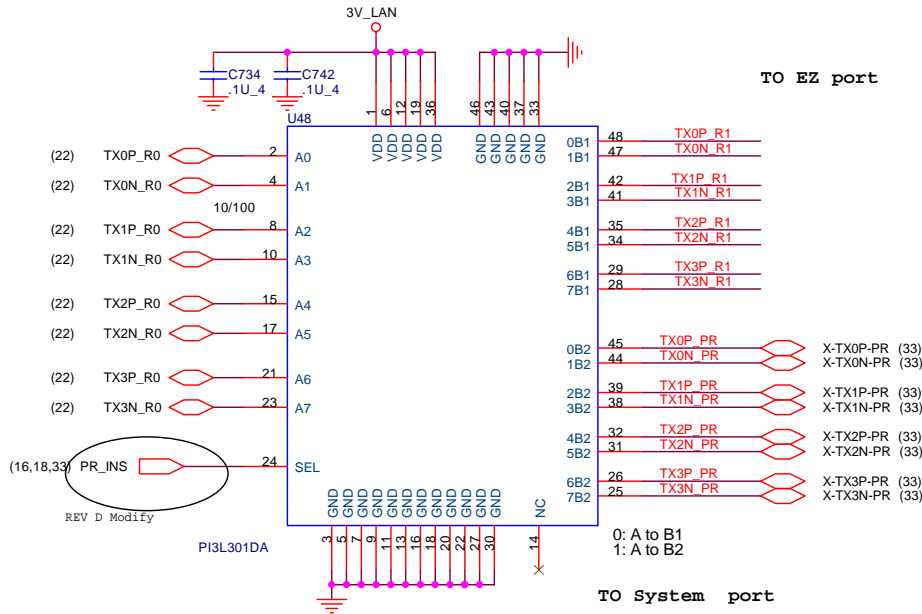
ID Select : AD22  
Interrupt Pin : INTB  
Request indicates : -REQ1  
Grant indicates : -GNT1

15mm x 15mm  
BGA196

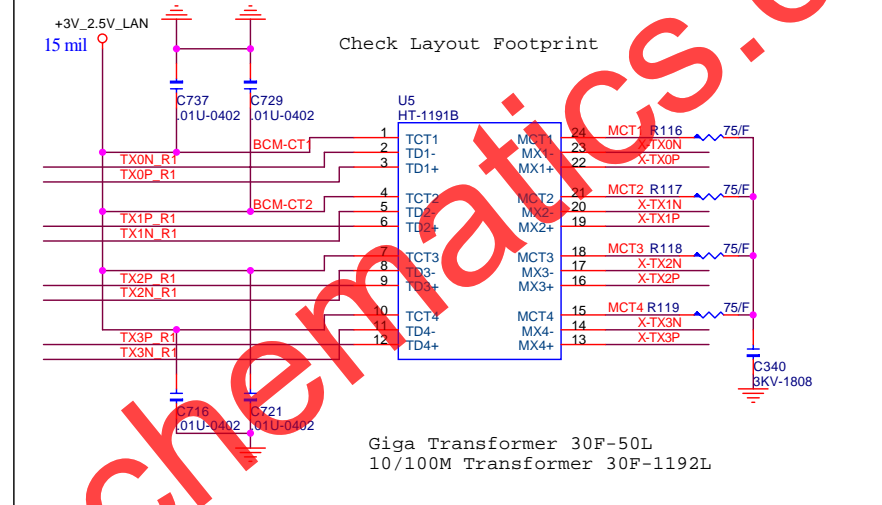


Voltage Rail	4401	5702	5705M
VDDIO_PCI	3V_S5	+3V	+3V
+3V_2.5V_LAN	3.3V	2.5V	2.5V
+1.8V_1.2V_LAN	1.8V	1.2V	1.2V
DNS	BCM4401	BCM5788M	
STU	Q16,Q17,U26	U55,R331,R332	
	R327,R329		
	R331,R332,U55	Q16,Q17,U26	

### Lan Switch

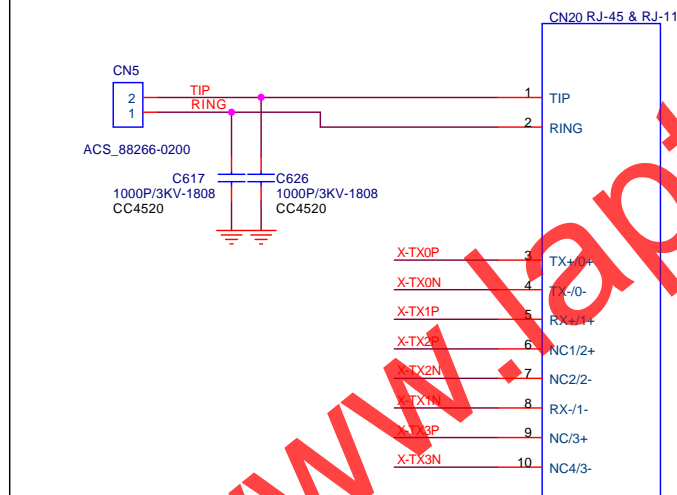


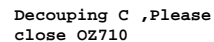
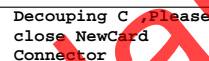
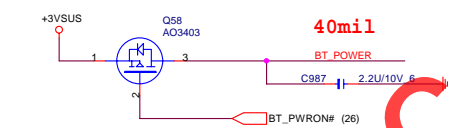
### 10/100/1000 M TRANSFORMER

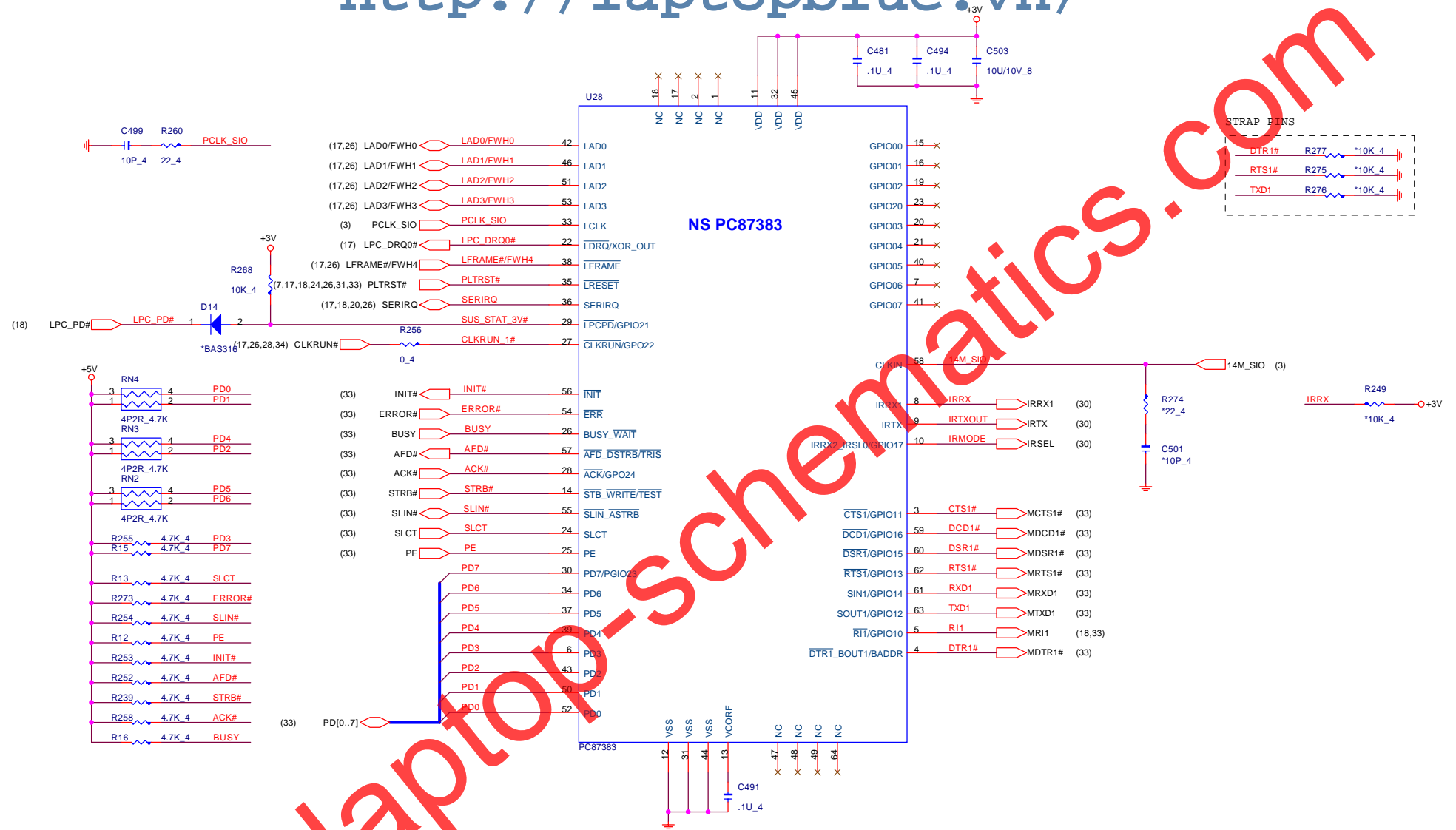


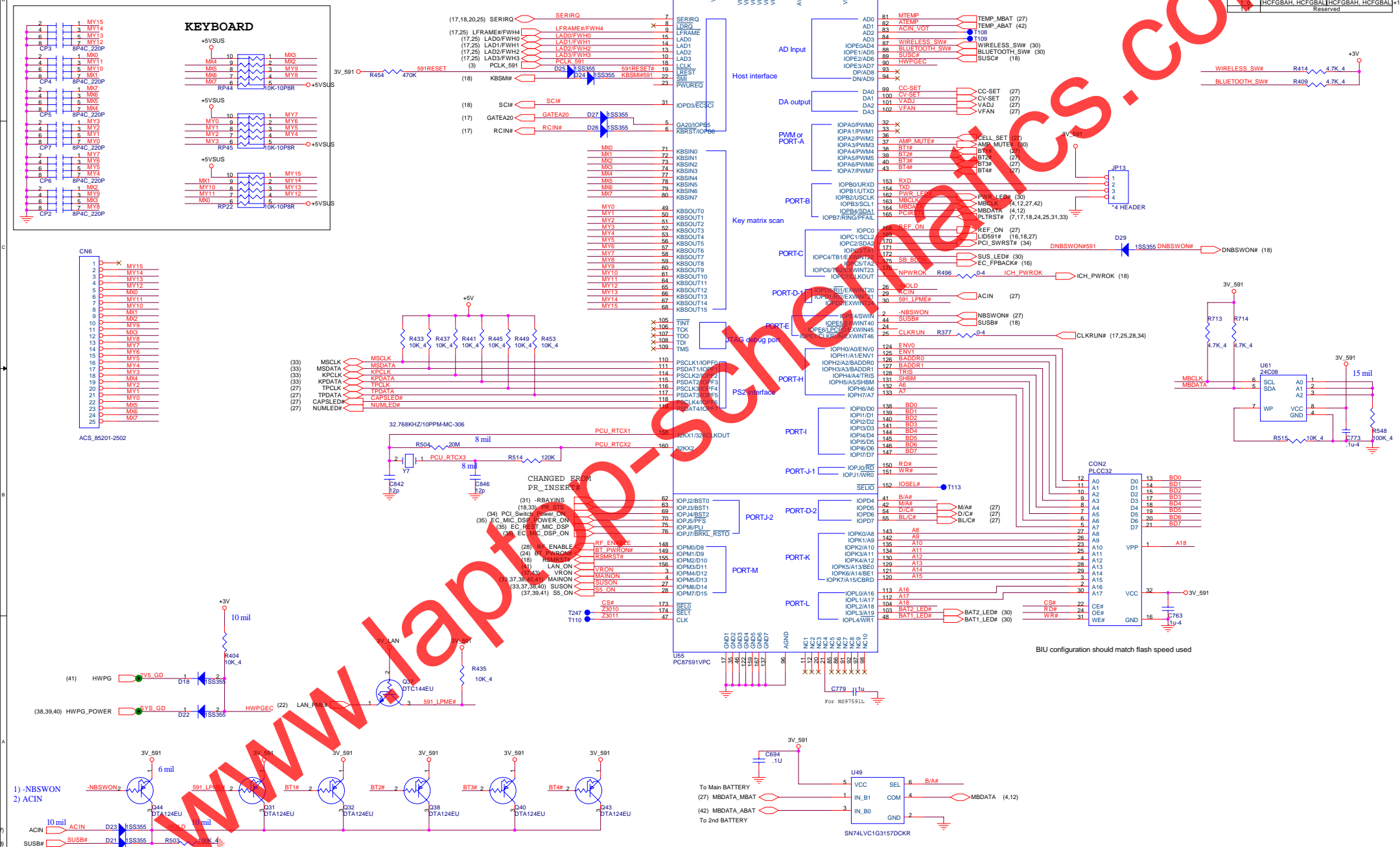
### LAN and RJ11 Jack

Check Layout Footprint



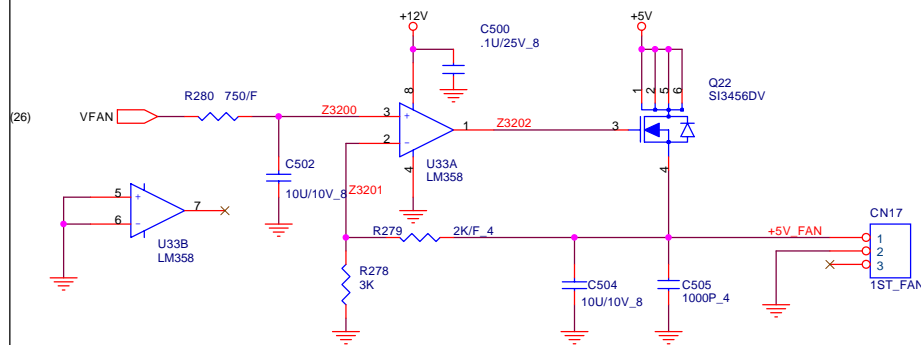




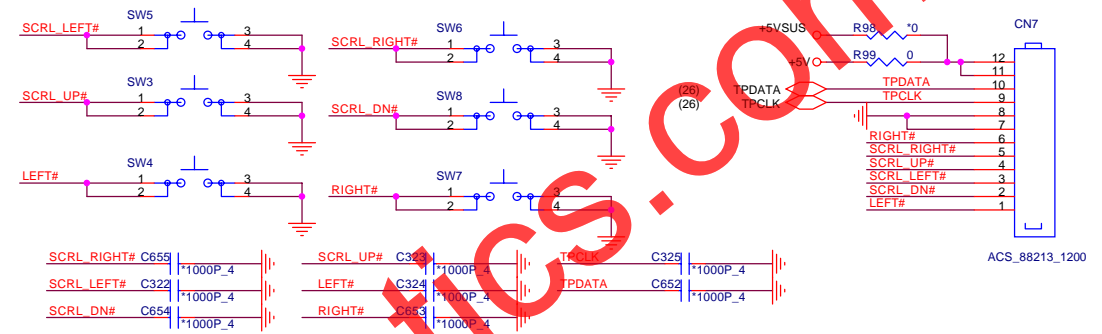




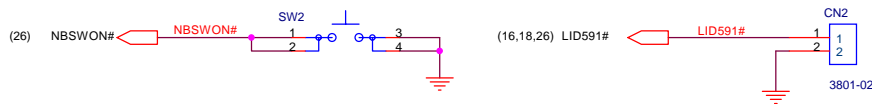
### 1st FAN OUT CONNECTOR



### TouchPad Switch and T/P Module Connector

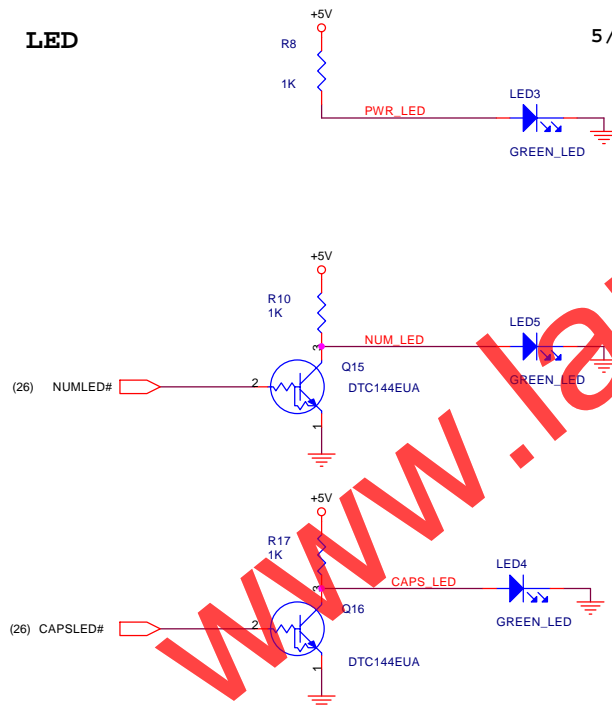


### Power Switch

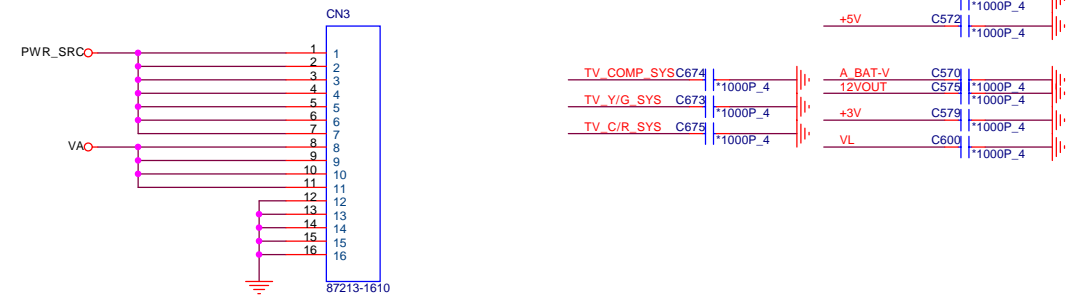


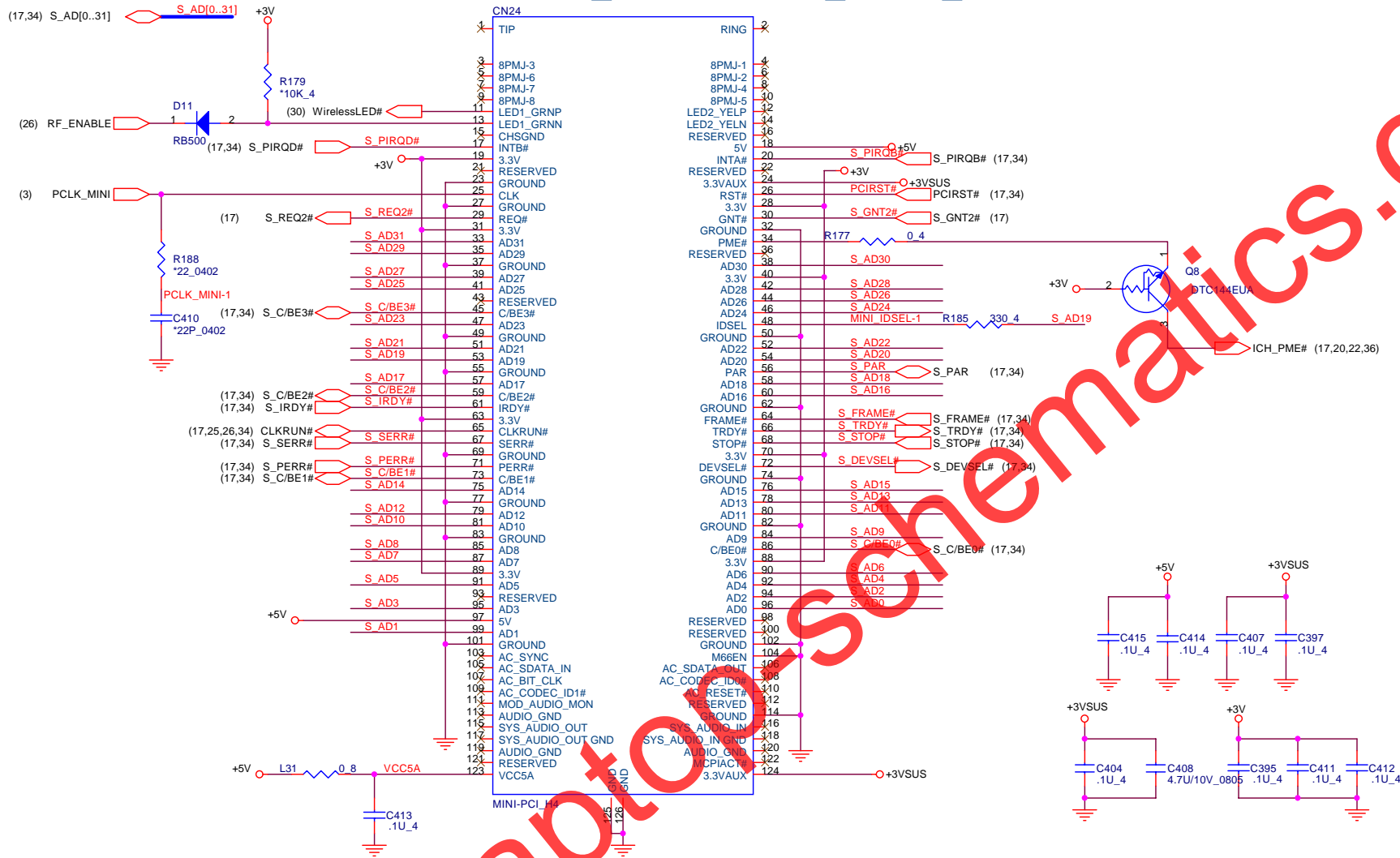
### LED

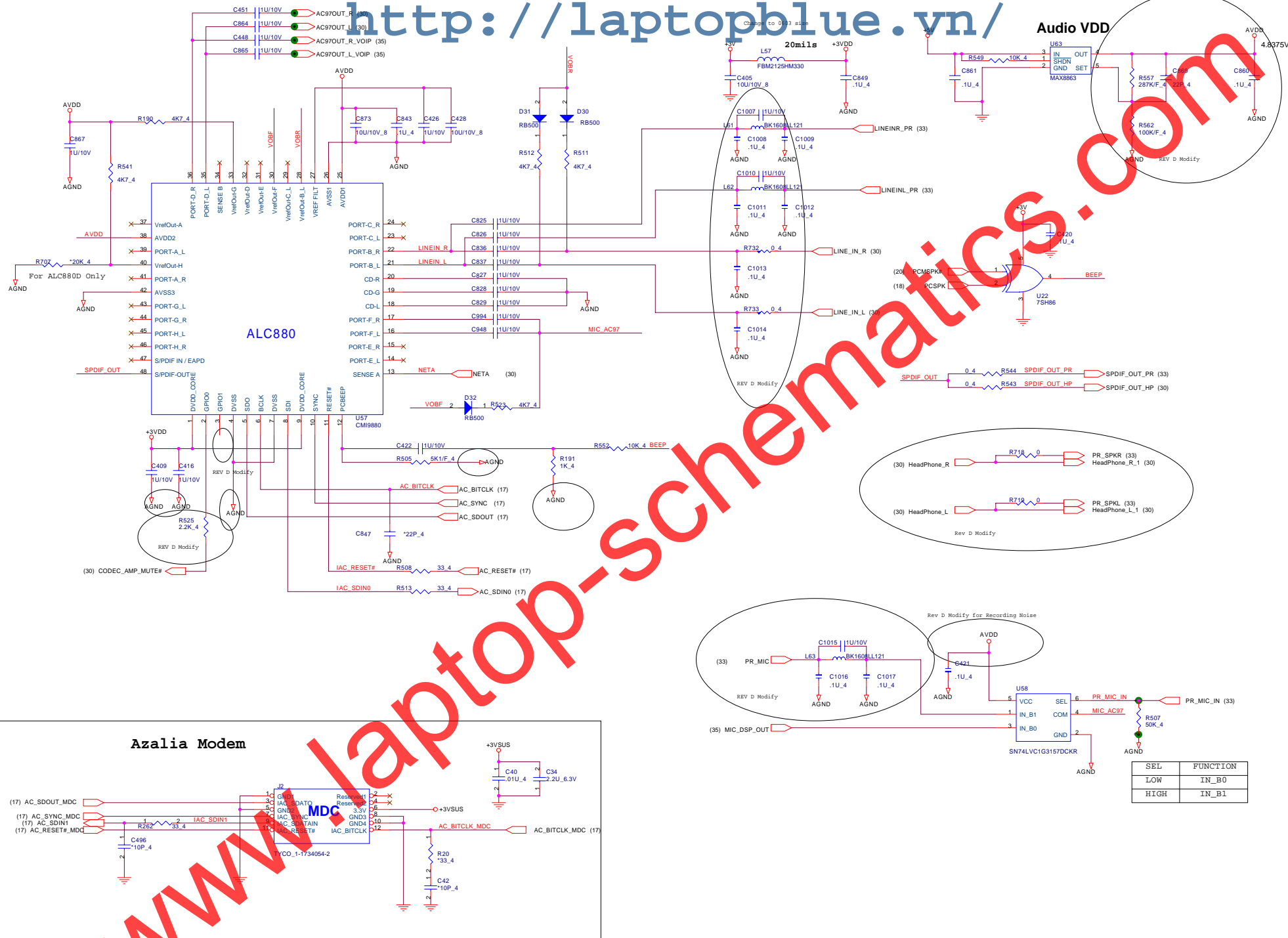
5/28 ADD



### Power Connector





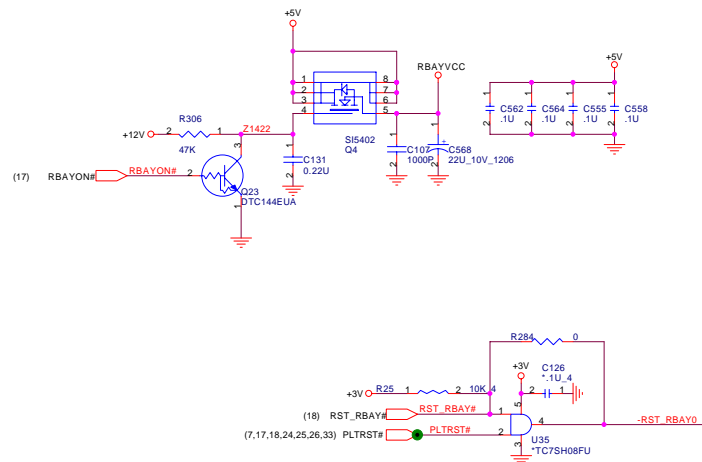


SEL	FUNCTION
LOW	IN_B0
HIGH	IN_B1

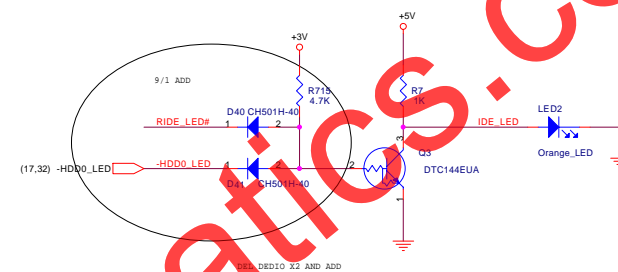


GAIN1	SPKR MODE	HP MODE
0	10.5DB	3
1	9DB	0

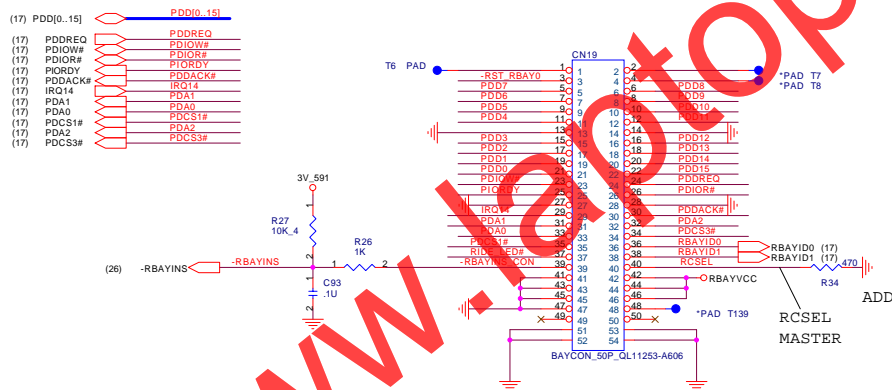
## SWAP BAY POWER CONTROL& RESET



## IDE LED CONTROL LOGIC

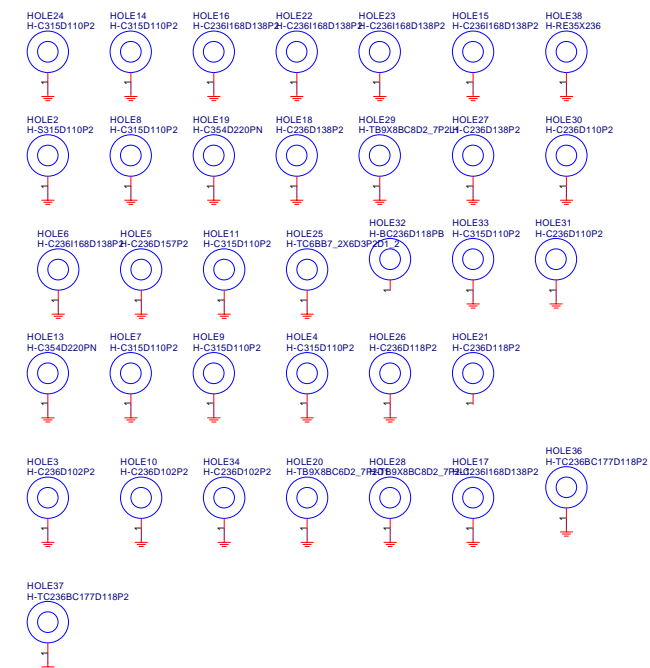
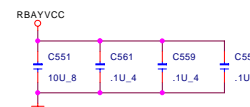


## Multi-Bay Connector

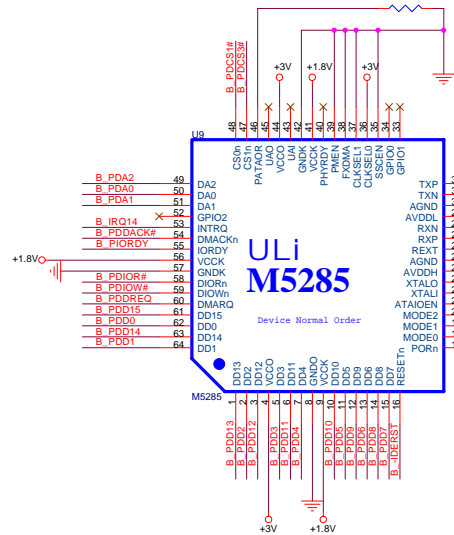
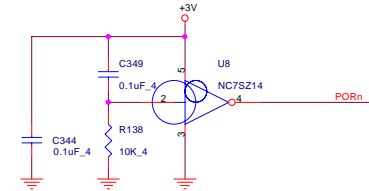
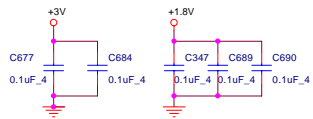


## BAY ID STATUS

RBAYID0/ LBAYID0	RBAYID1/ LBAYID1	STATUS
0	1	HDD
1	0	CD/DV







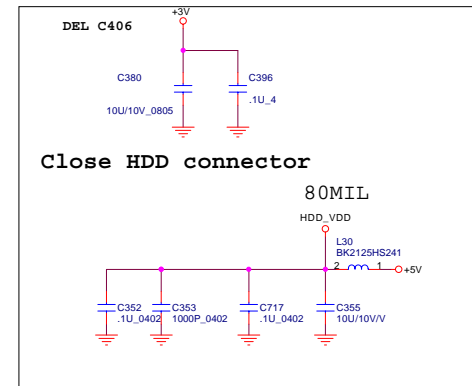
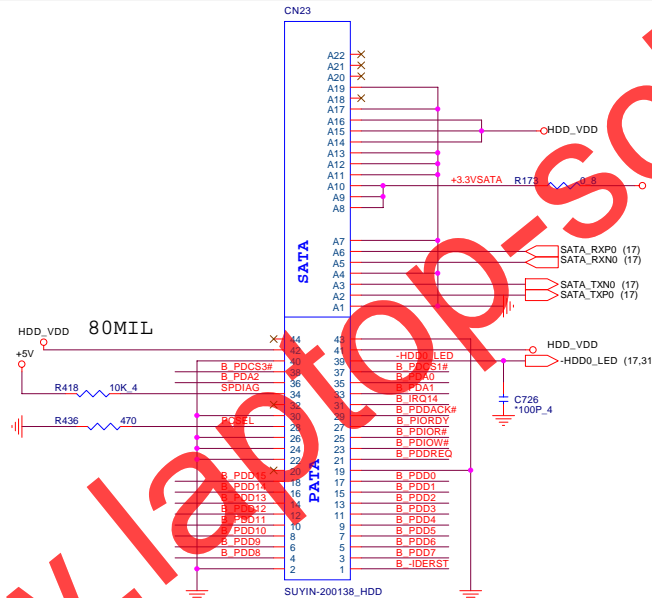
R18 Place close to power pins  
near IC  
Bypass CAP, close to power pins

#### Operation Mode

MODE[2..0]	Device mode
0 0 0	Device mode 100MB/S
0 0 1	Device mode 133MB/S
0 1 0	Device mode 150MB/S
0 1 1	RESERVE
1 0 0	Host mode 100MB/S
1 0 1	Host mode 133MB/S
1 1 0	Host mode 150MB/S
1 1 1	RESERVE

#### Reference clock select

CLKSEL[1..0]	External clock
0 0	20 MHz
0 1	25 MHz

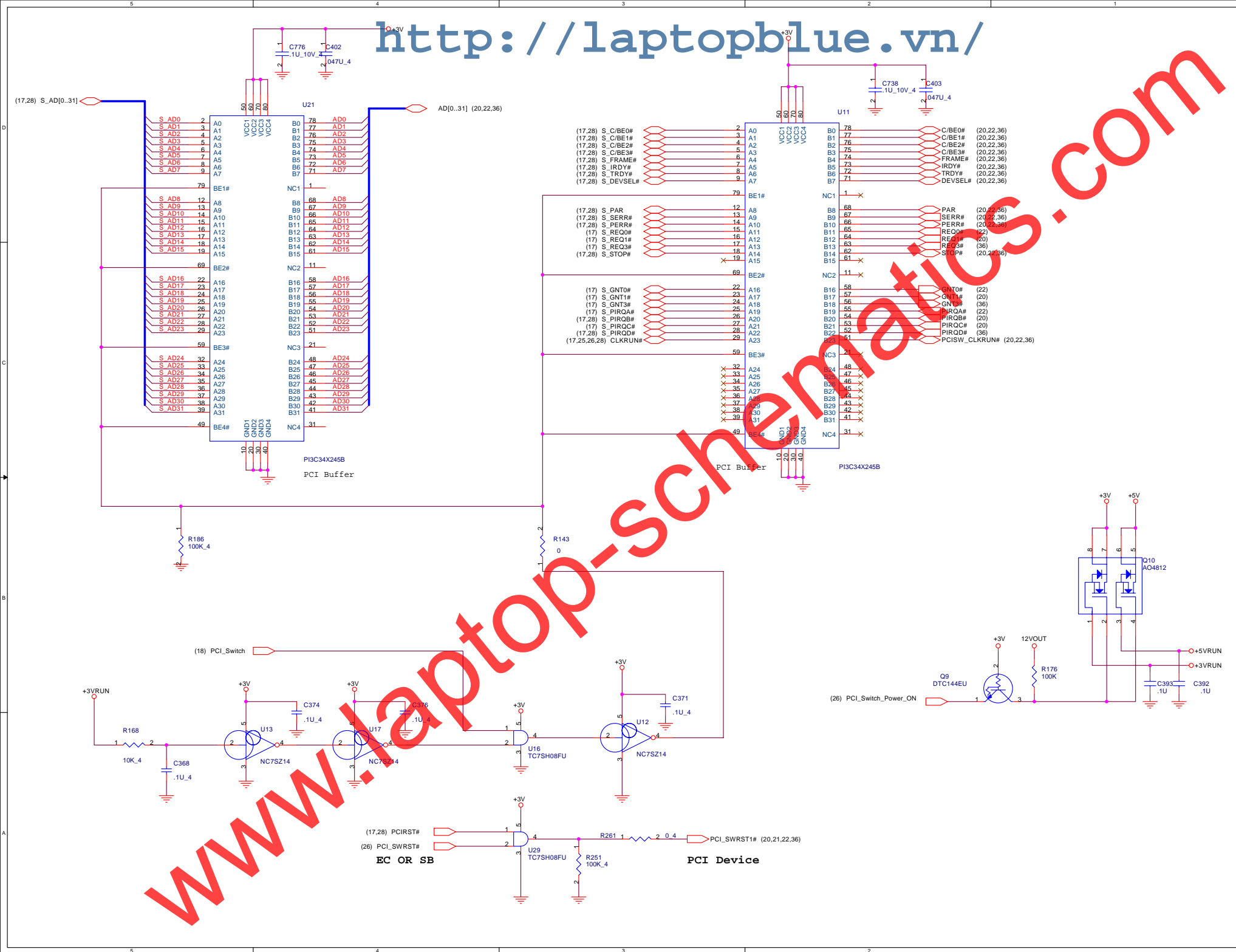


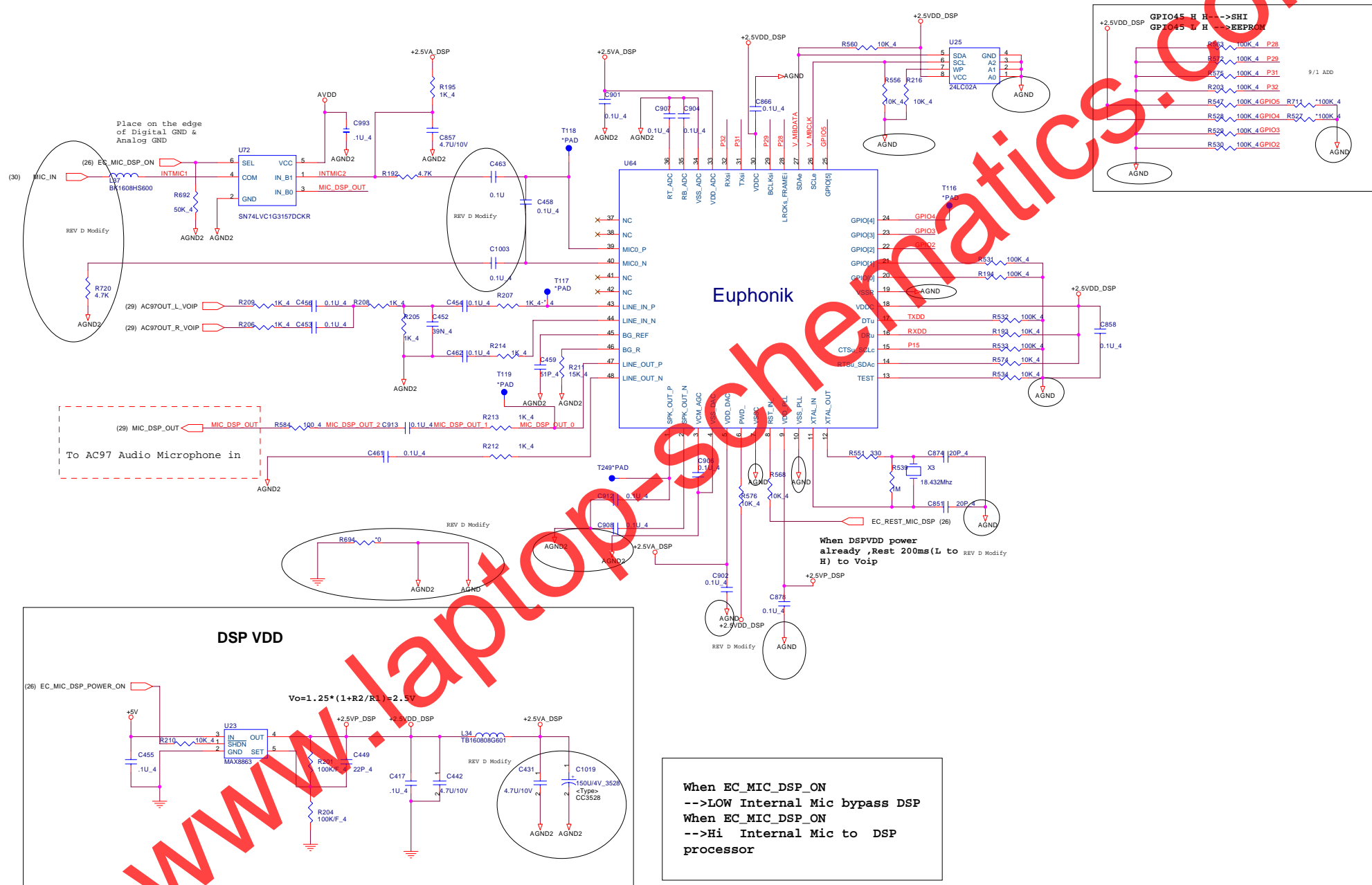
```
CRT  L  PR
      H  SYS
```

PR\_SIS (18,26)

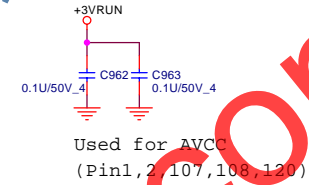
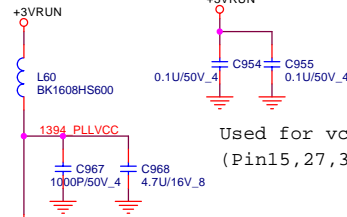
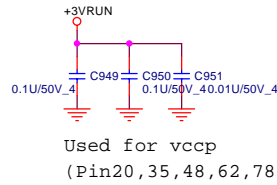
Ceck Anda

Ceck Anda





# IEEE-1394



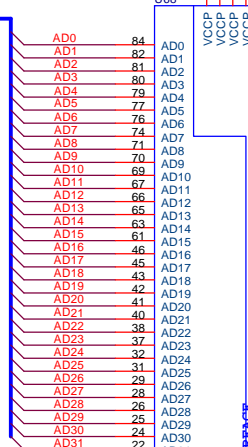
ID Select : AD23

Interrupt Pin : PIRQD#

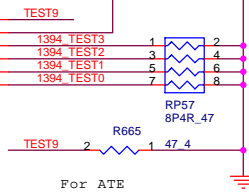
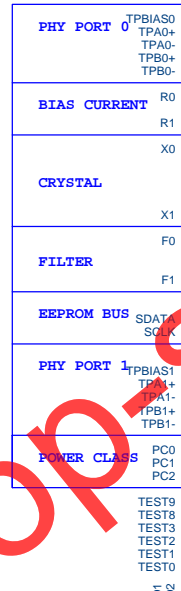
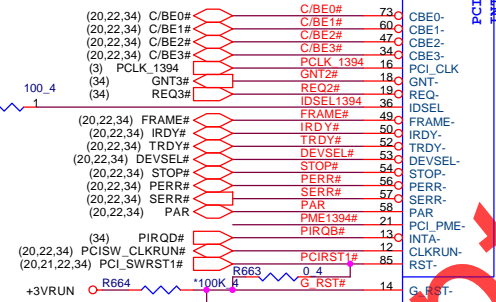
Request indicates : REQ3#

Grant indicates : GNT3#

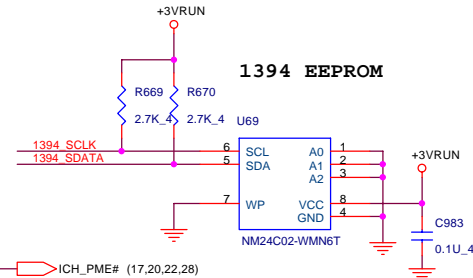
(20,22,34) AD[0..31]



PCI INTERFACE



## 1394 EEPROM



PLW3216S900SQ2B1

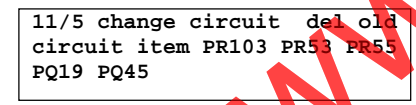
PLW3216S900SQ2B1

CONN-1394

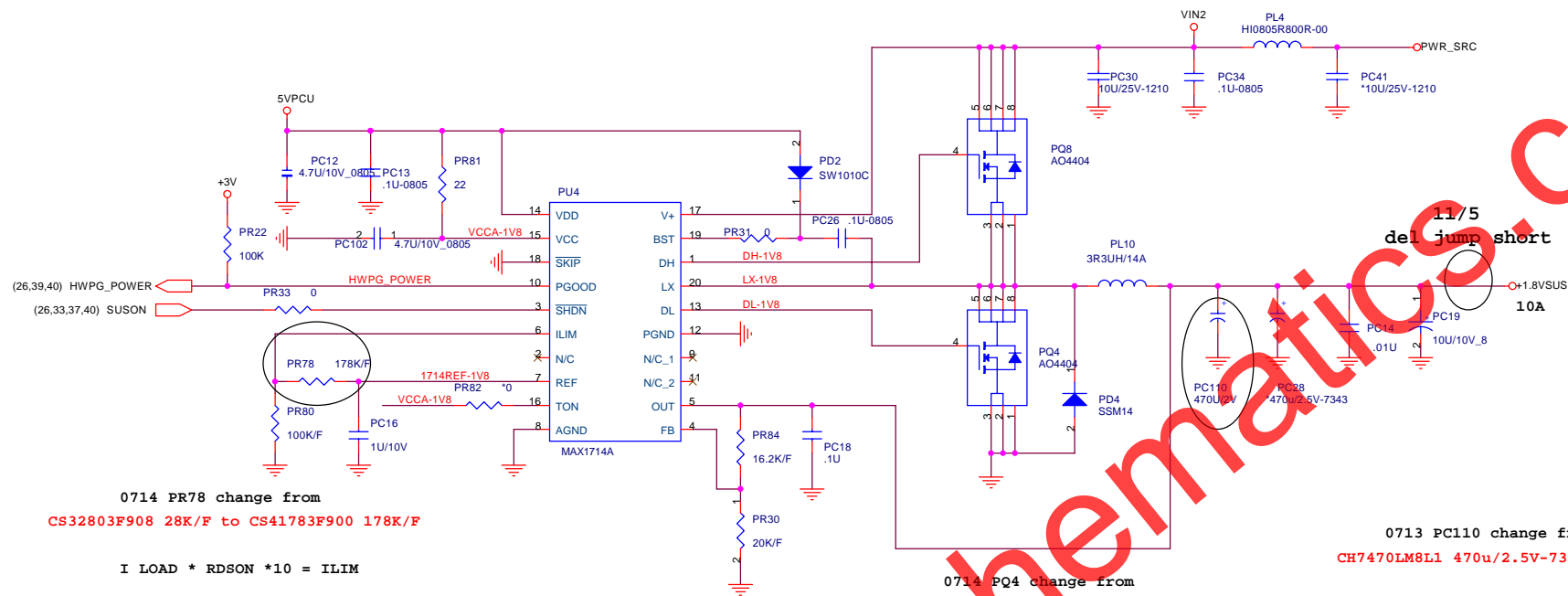
Q61

DTC144EU





$$V_o = 0.8(R_1 + R_2) / R_2$$



0714 PR78 change from  
CS32803F908 28K/F to CS41783F900 178K/F

$I_{LOAD} * R_{DS(on)} * 10 = I_{LIM}$

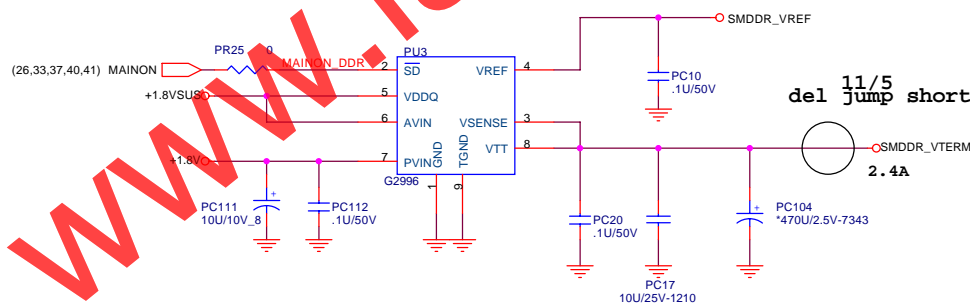
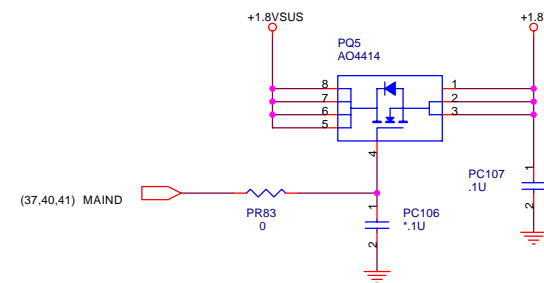
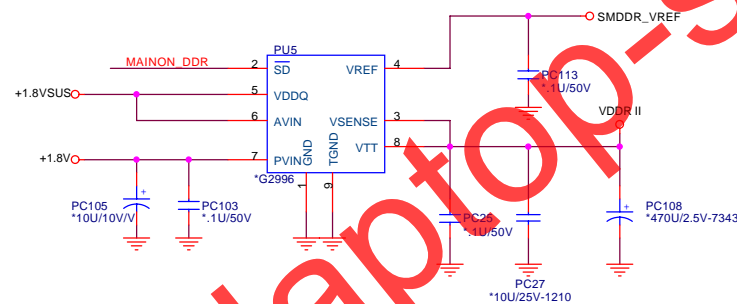
FDD6688  $R_{DS(on)} 4.5V = 0.006 \text{ ohm}$

$12 * 0.006 * 10 = 0.72V (I_{LIM})$

0713 PC110 change from  
CH7470LM8L1 470u/2.5V-7343 to CH747RY8800 470u/2V-7343

0714 PQ4 change from  
BAM47040Q03 AO4704 to BAM66880Z01 FDD6688

0714 PD4 change from  
NC to BG000014Z01 SSM14





0713 PC72 change from  
CH7470LM8L1 470u/2.5V-7343 to CH747RY8800 470u/2V-7343



0714 PR37 change from  
CS21823F902 1.82K/F to CS27683F909 7.68K/F

0714 PL13 change from  
CV-15A0MZ05 1R5 to CV-33E0MZ01 3R3

0714 PQ11 change from  
BAM44040012 AO4404 to BAM60300Z11 FDD6030L

0714 PQ37 change from  
BAM47040005 AO4704 to BAM6680Z01 FDD6688

$$L / RL( DCR ) = Cqe * Rqe$$

$$3R3 \text{ DCR} = 0.0043$$

$$3.3u / 0.0043 = 0.1u * Rqe$$

$$Rqe = 7.68K$$

$$L / RL( DCR ) = Cqe * Rqe$$

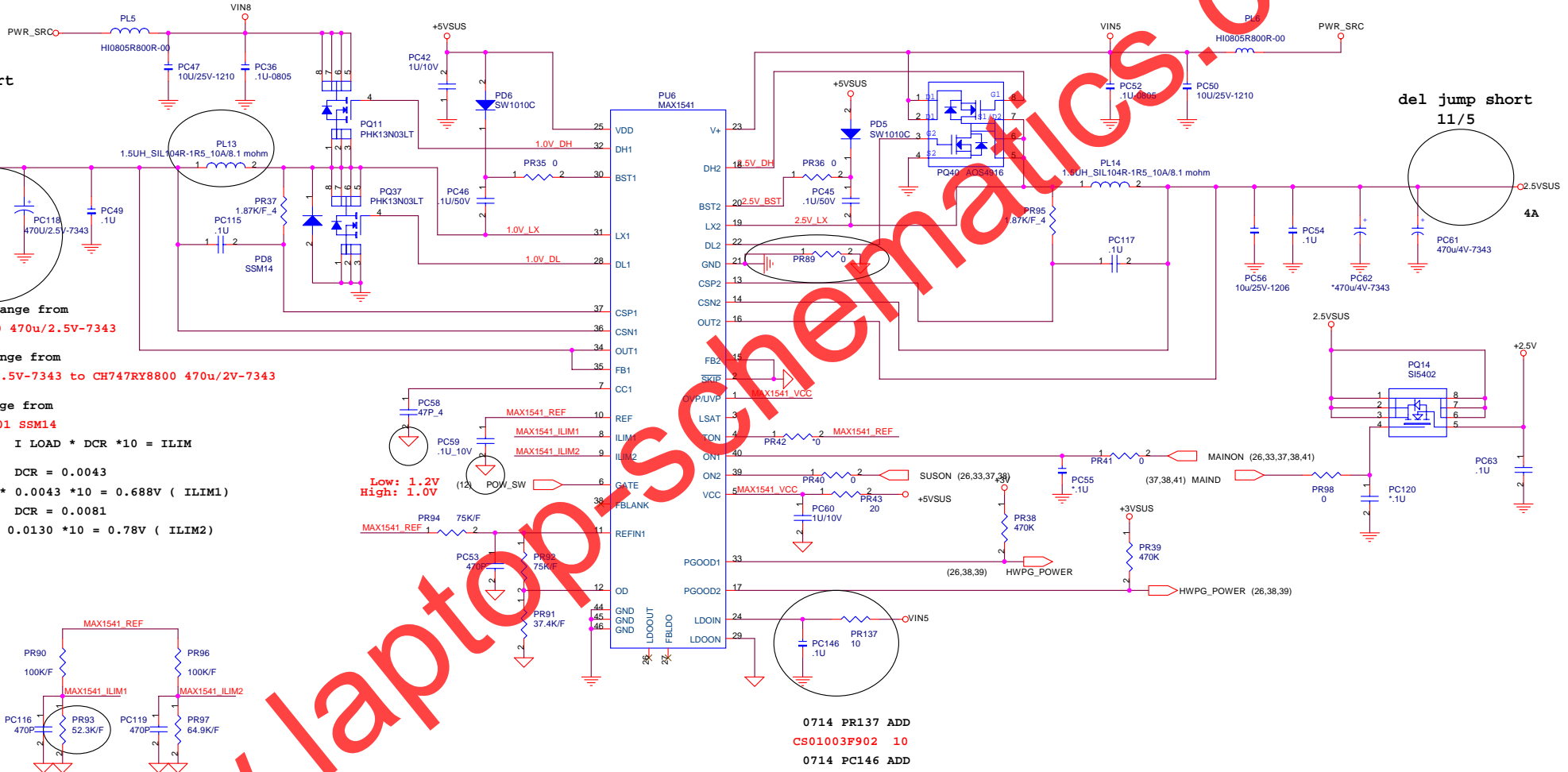
$$3R8 \text{ DCR} = 0.0130$$

$$3.8u / 0.0130 = 0.1u * Rqe$$

$$Rqe = 2.94K$$

del jump short  
11/5

del jump short  
11/5



0714 PC118 change from  
NC to CH747RY8800 470u/2.5V-7343

0713 PC57 change from  
CH7470LM8L1 470u/2.5V-7343 to CH747RY8800 470u/2V-7343

0714 PD8 change from  
NC to BC000014Z01 SSM14

$$I \text{ LOAD} * DCR * 10 = ILIM$$

$$3R3 \text{ DCR} = 0.0043$$

$$16 * 0.0043 * 10 = 0.688V ( ILIM1)$$

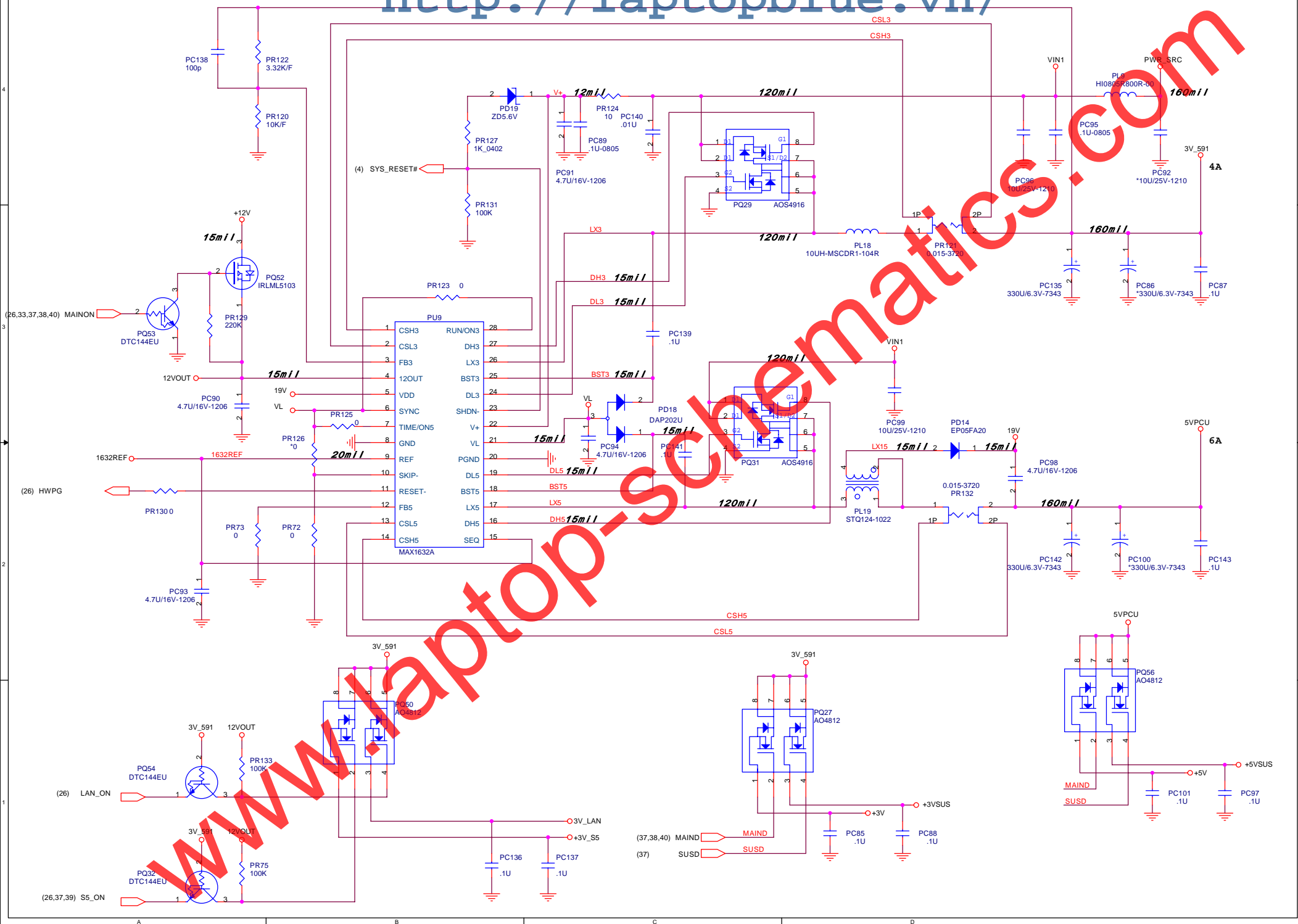
$$1R5 \text{ DCR} = 0.0081$$

$$6 * 0.0130 * 10 = 0.78V ( ILIM2)$$

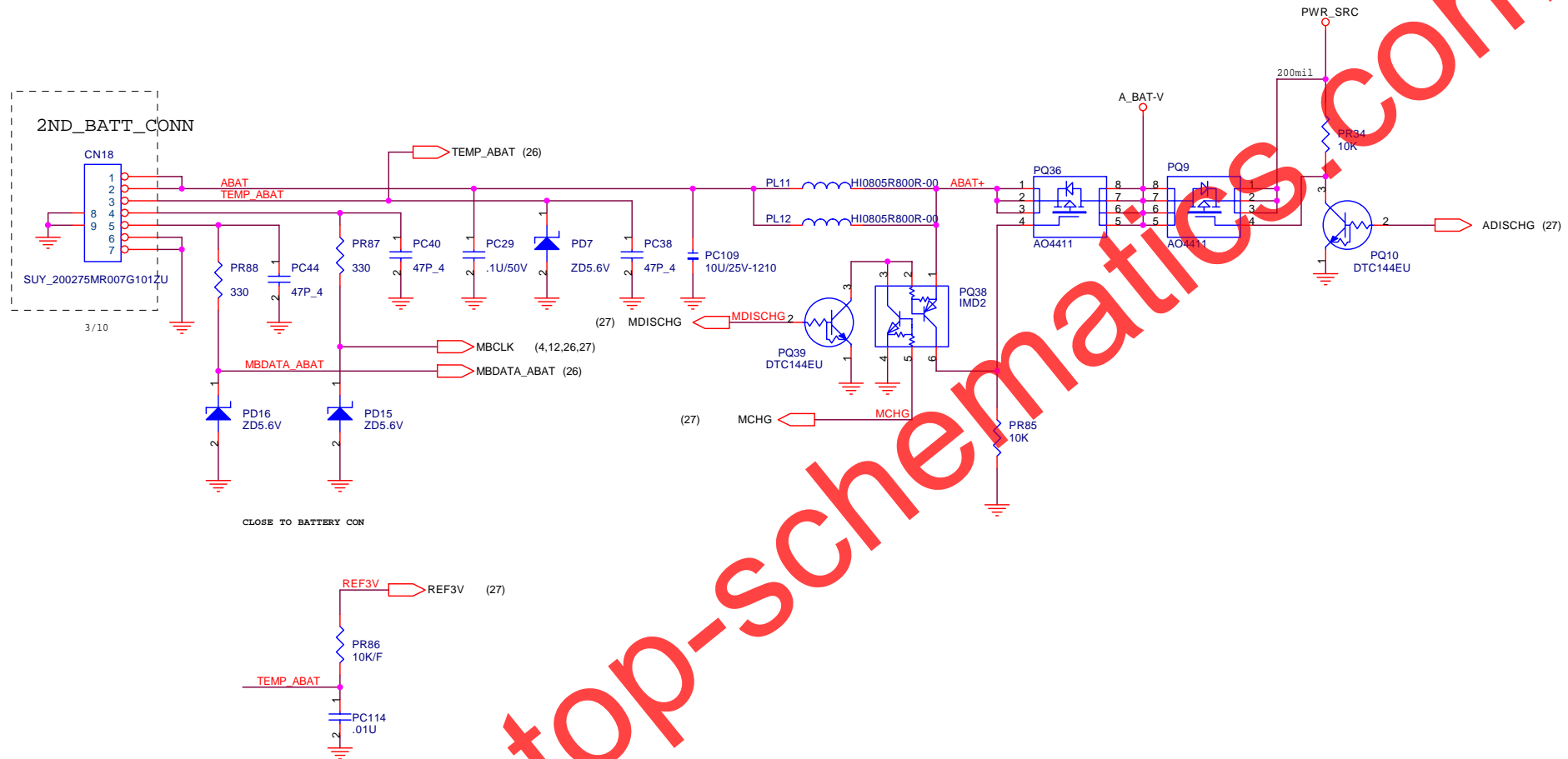
Low: 1.2V  
High: 1.0V

0714 PR137 ADD  
CS01003F902 10  
0714 PC146 ADD  
CH41006K911 0.1U

<http://laptopblue.vn/>







0714 PR27 change from  
82.5K/1 VCC CORE +5V VIN6  
CS-33304JA09 1.3 to CS00005JA01 0  
waveforms

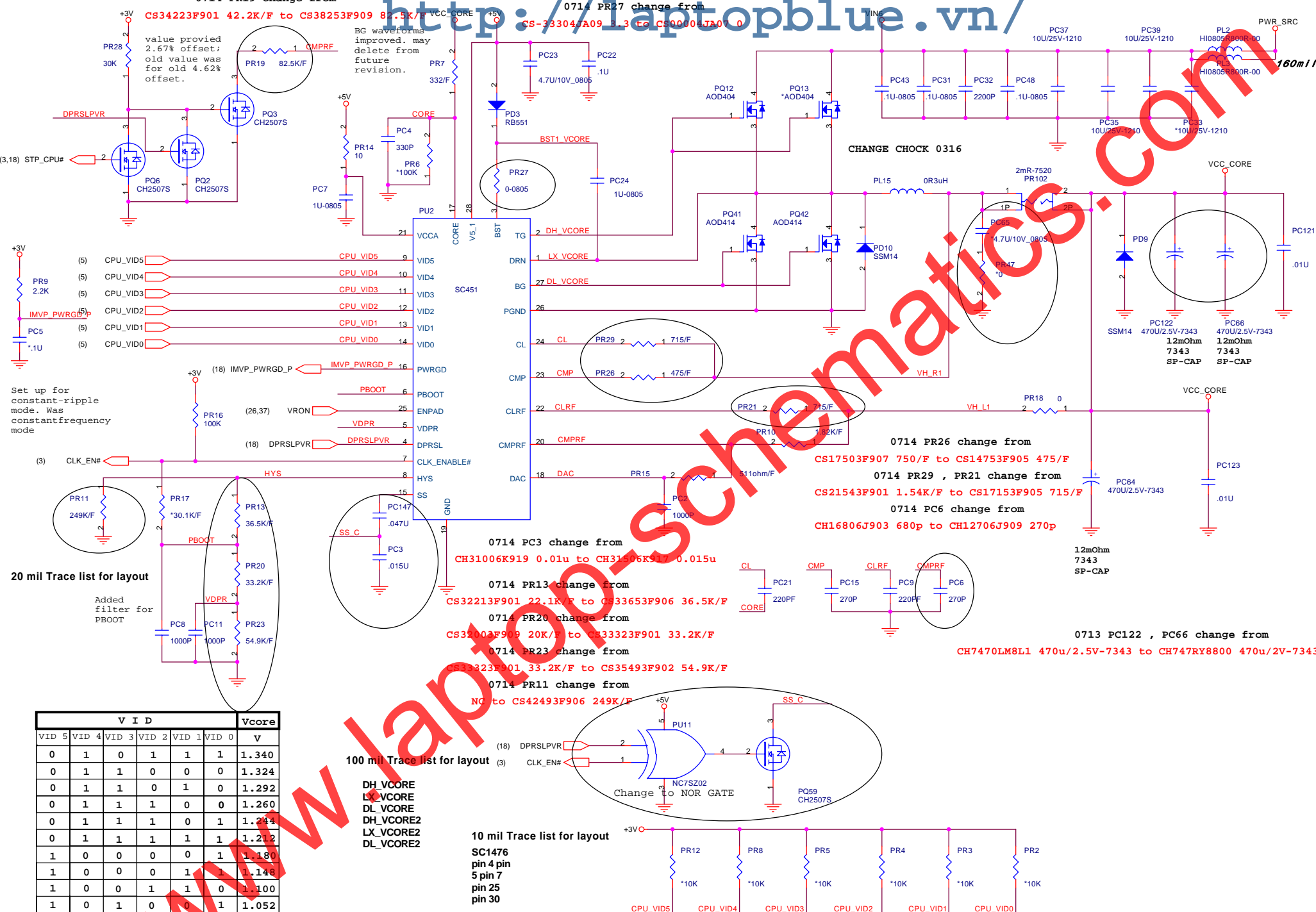
0714 PR19 change from

CS34223F901 42.2K/F to CS38253F909 82.5K/F VCC\_CORE

0714 PR27 change from

CS-33304JA09 3.3 to CS00004JA07 0

```
value provided
2.67% offset;
old value was
for old 4.62%
offset.
```



## 20 mil Trace list for layout

```
Added
filter for
BROOT
```

V I D						Vcore
VID 5	VID 4	VID 3	VID 2	VID 1	VID 0	V
0	1	0	1	1	1	1.340
0	1	1	0	0	0	1.324
0	1	1	0	1	0	1.292
0	1	1	1	0	0	1.260
0	1	1	1	0	1	1.244
0	1	1	1	1	1	1.212
1	0	0	0	0	1	1.180
1	0	0	0	1	1	1.148
1	0	0	1	1	0	1.100
1	0	1	0	0	1	1.052
1	0	1	0	1	1	1.020
1	0	1	1	1	0	0.972
1	1	0	0	0	0	0.940

100 mil Trace list for layout

DH\_VCORE  
LX\_VCORE  
DL\_VCORE  
DH\_VCORE2  
LX\_VCORE2  
DL\_VCORE2

10 mil Trace list for layout

SC1476  
pin 4 pin  
5 pin 7  
pin 25  
pin 30

0713 PC122 , PC66 change from

CH7470LM8L1 470u/2.5V-7343 to CH747RY8800 470u/2V-7343