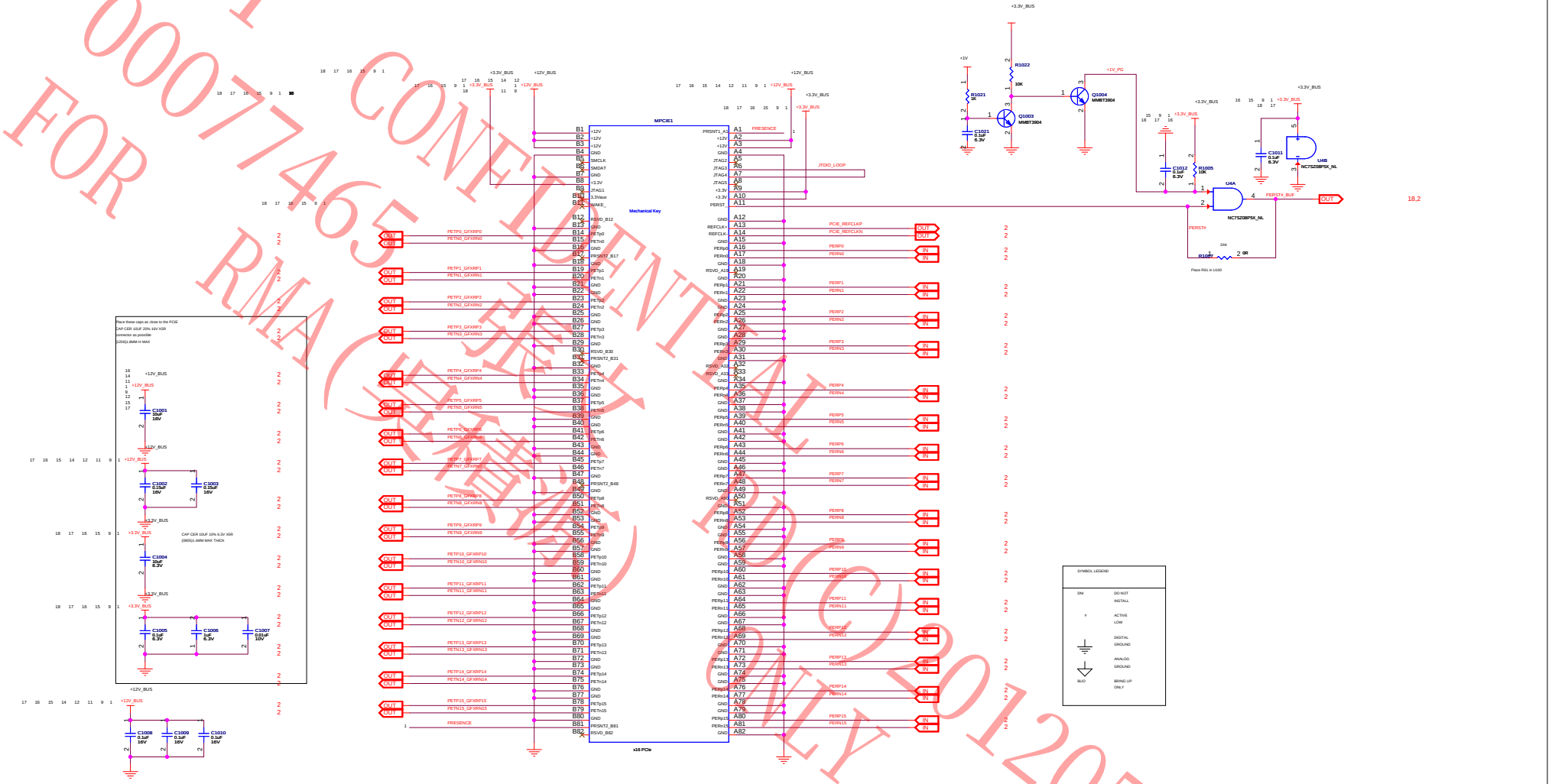
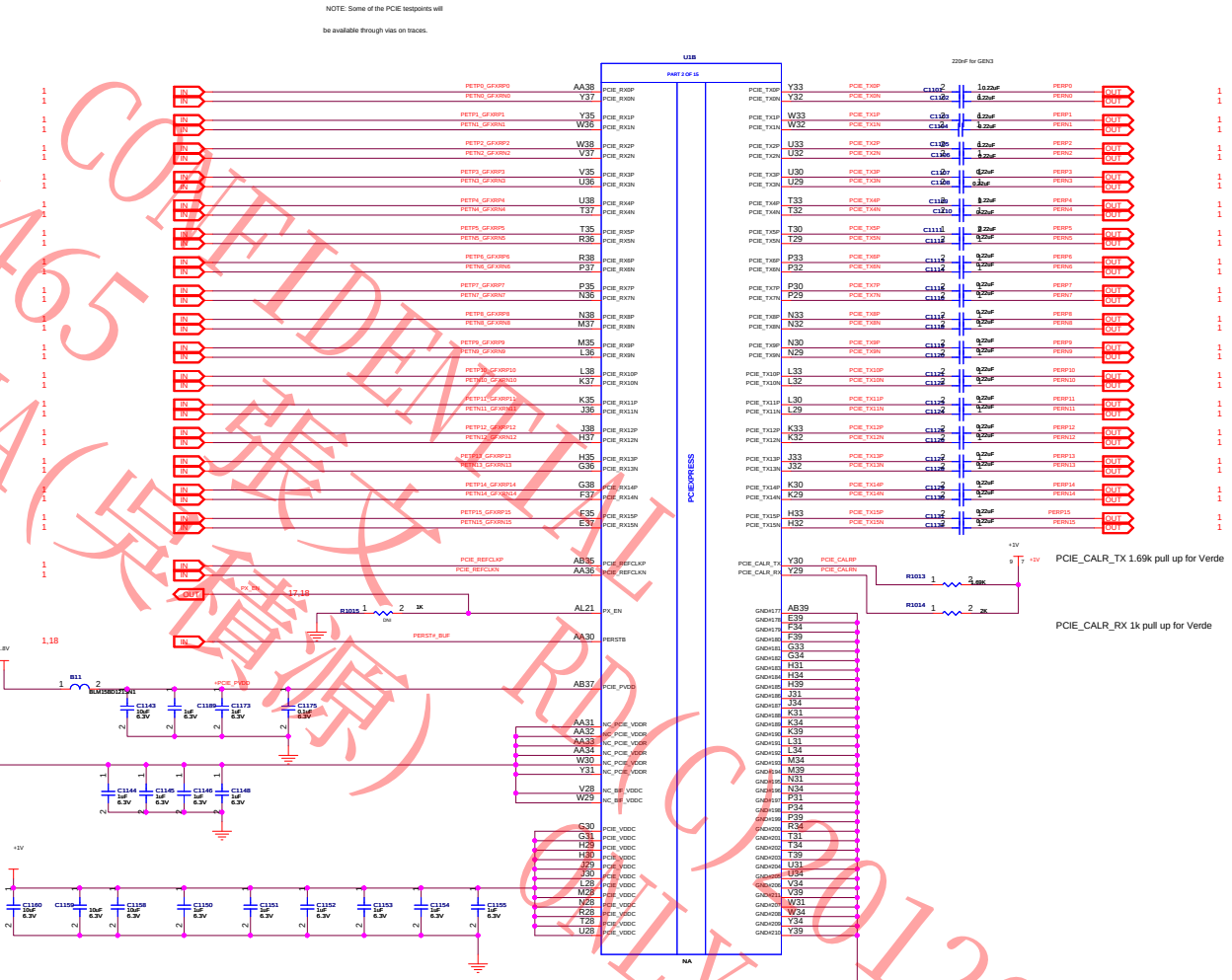
PCI-EXPRESS EDGE CONNECTOR



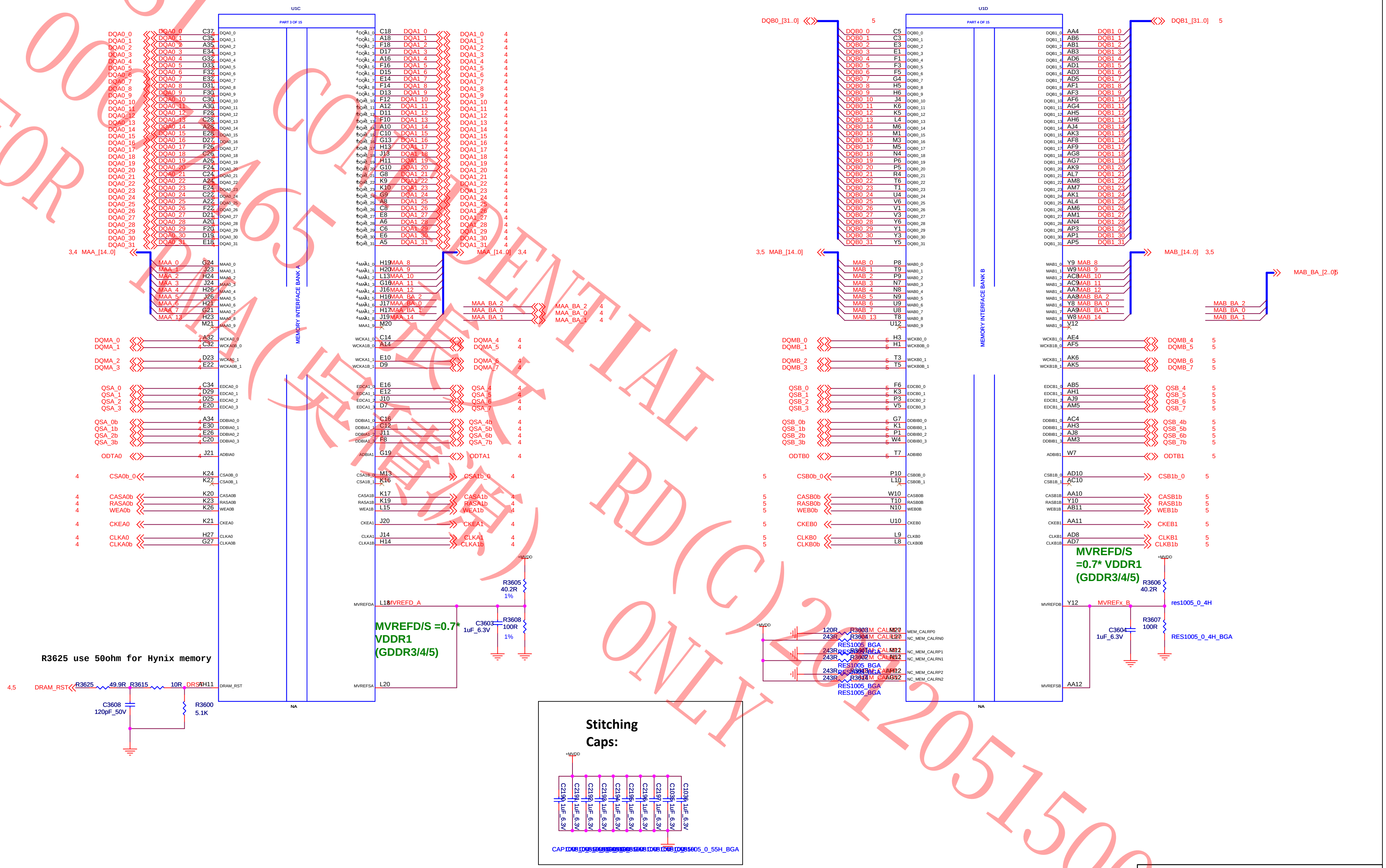
Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size	Document Number		Rev
Custom	2012-03-01-01		01
Date:	Wednesday, April 18, 2012	Sheet 1 of 21	

Cape_Verde PCIe Interface



Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size	Document Number		Rev
Custom	2012-03-01-01		01
Date:	Wednesday, April 18, 2012	Sheet 2 of 21	

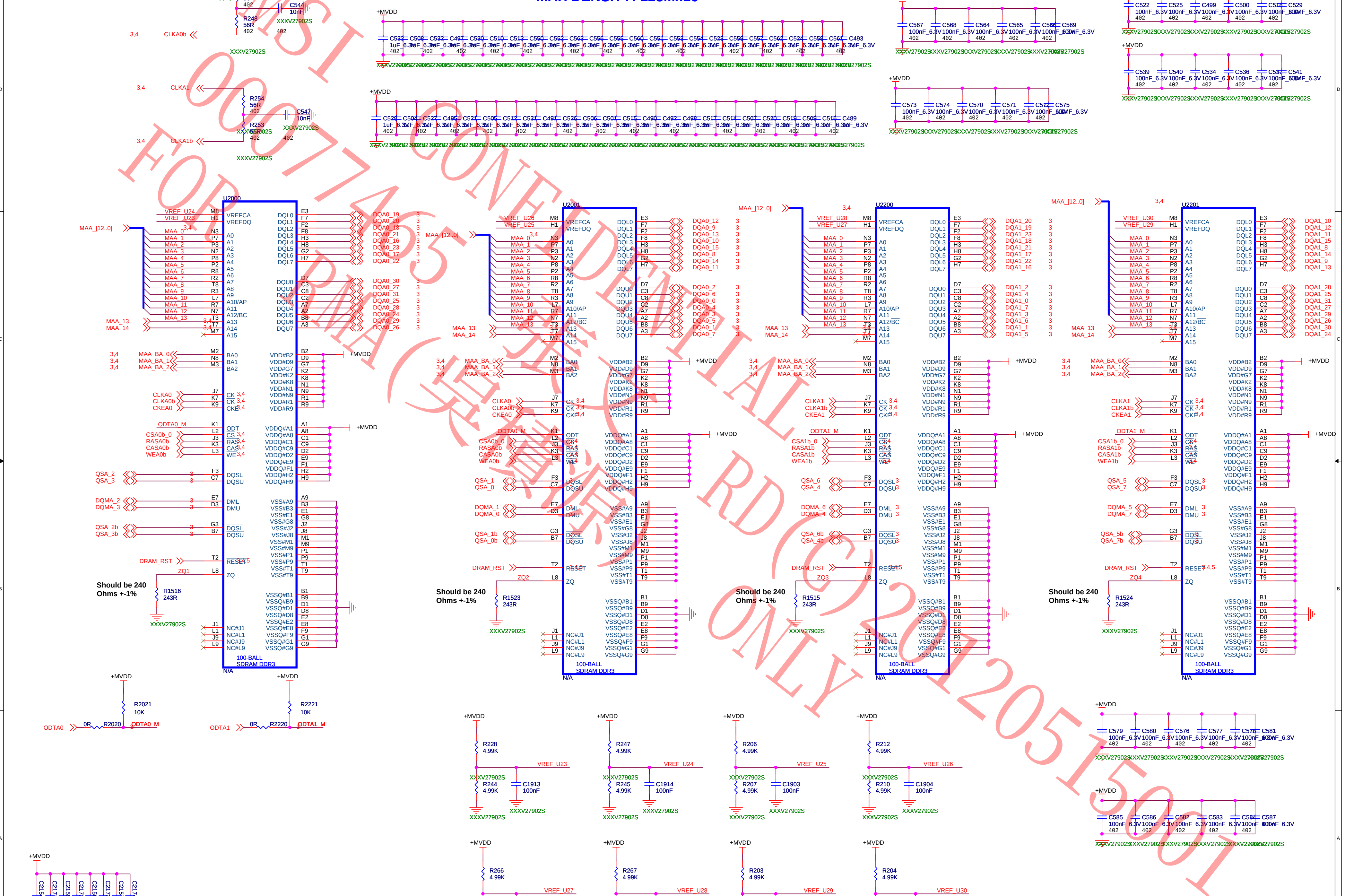
CAPE VERDE MEM Interface Ch A&B



Title	MS-V279-4.0 (AMD C445 qual. DDR3)	
Size Custom	Document Number 2012-03-01-01	Rev 01
Date: Wednesday, April 18, 2012	Sheet 3 of 21	

CHANNEL A: RANK 0 1024MB DDR3 64 BIT

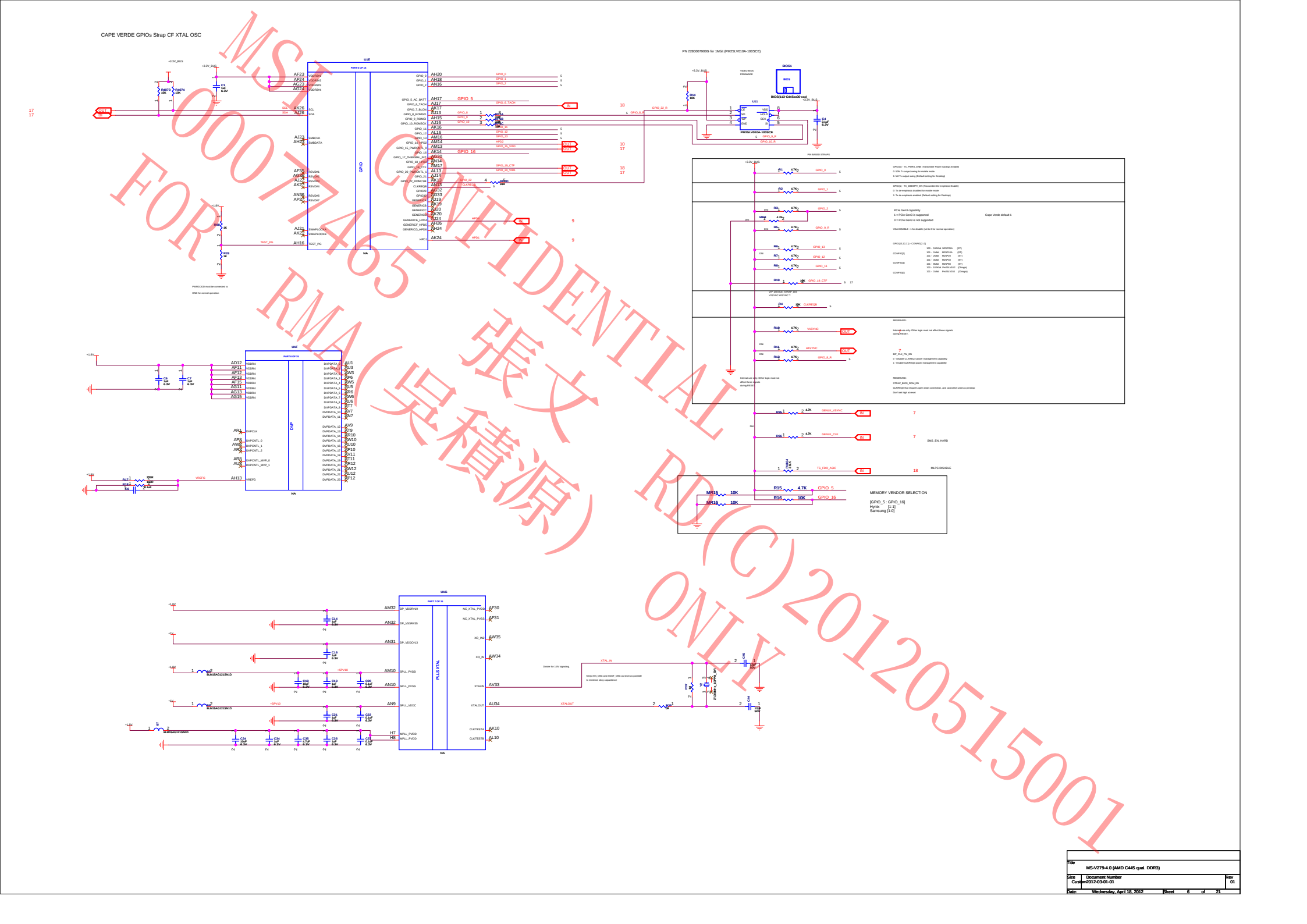
MAX DENSITY: 128Mx16

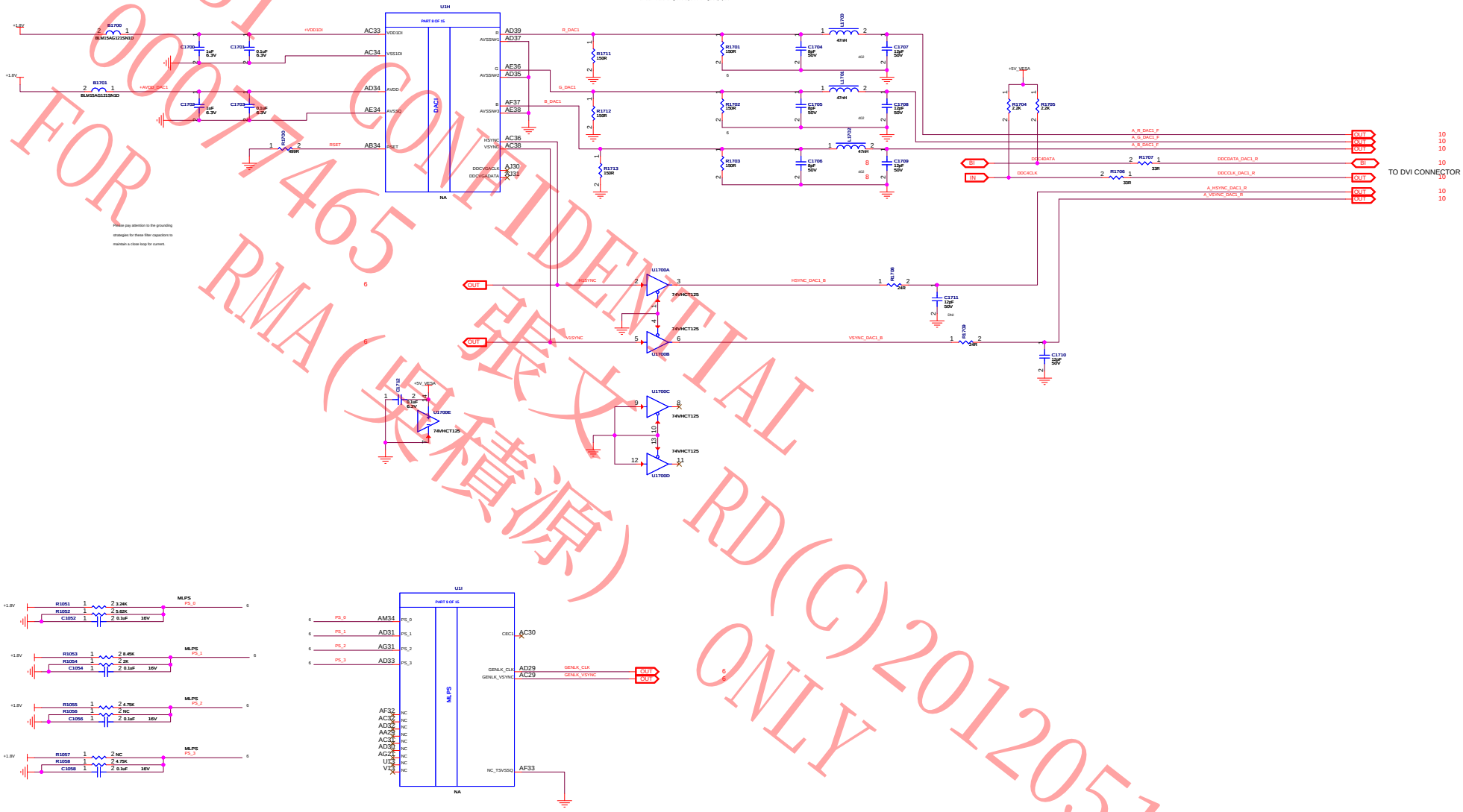


Title	MS-V279-4.0 (AMD C445 qual. DDR3)	
Size C	Document Number 2012-03-01-01	Rev 01
Date: Wednesday, April 18, 2012	Sheet 4 of 21	

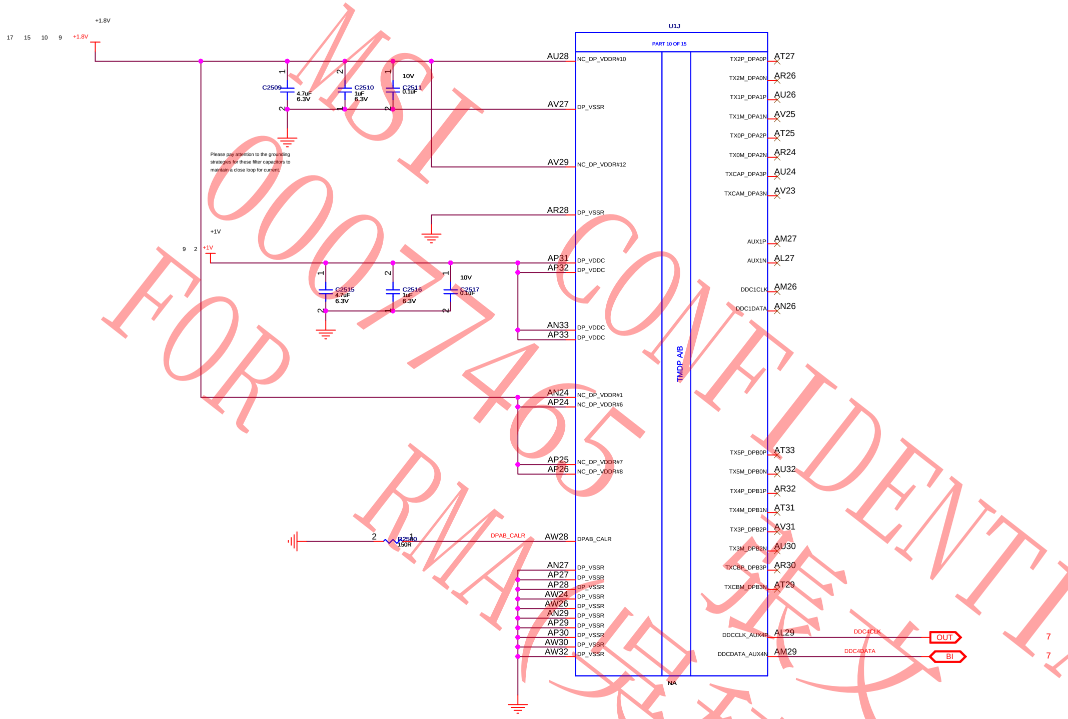
(5) DDR3 Memory Channel B

Title	MS-V279-4.0 (AMD C445 qual. DDR3)	
Size C	Document Number 2012-03-01-01	Rev 01
Date: Wednesday, April 18, 2012	Sheet 5 of 21	



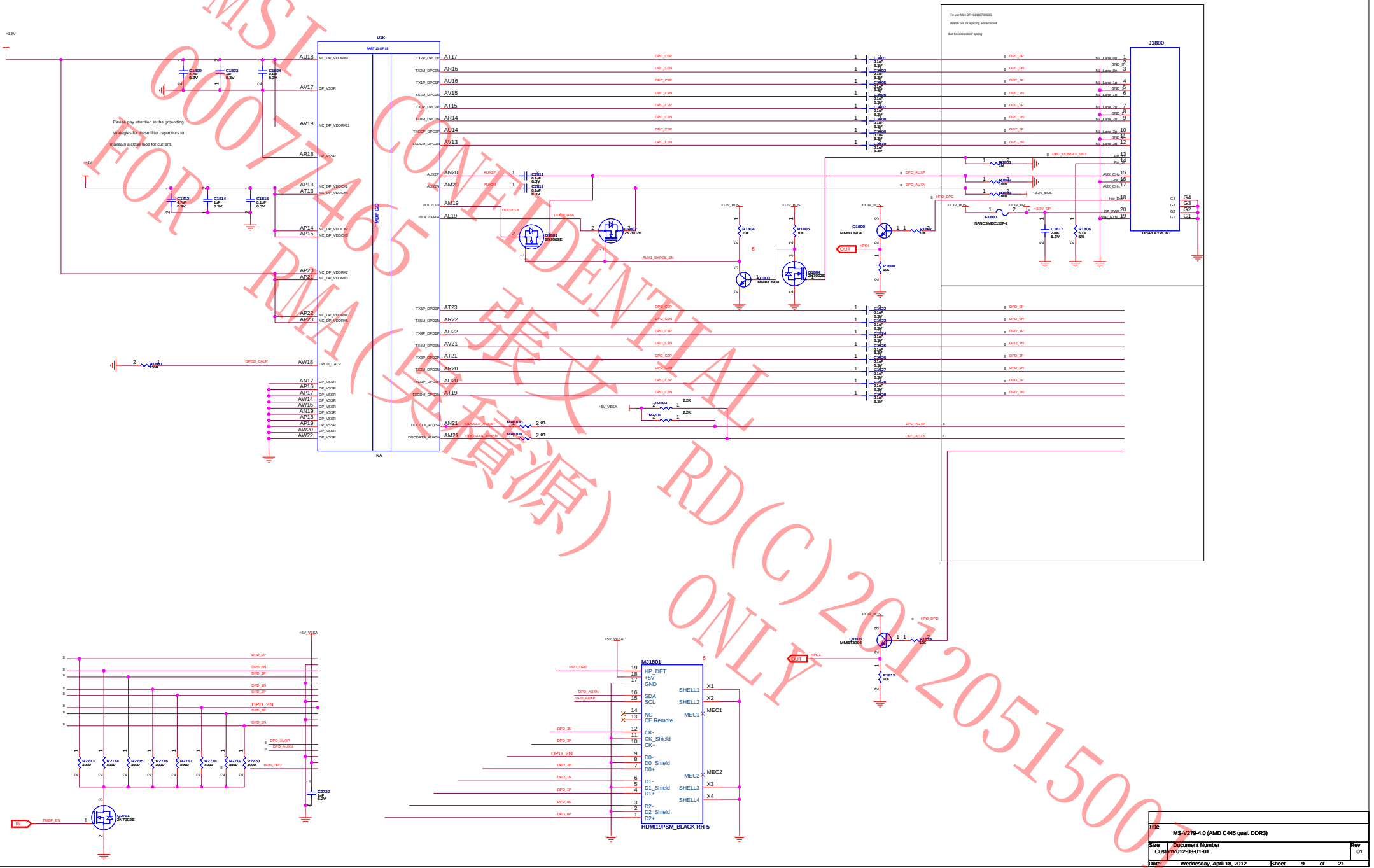


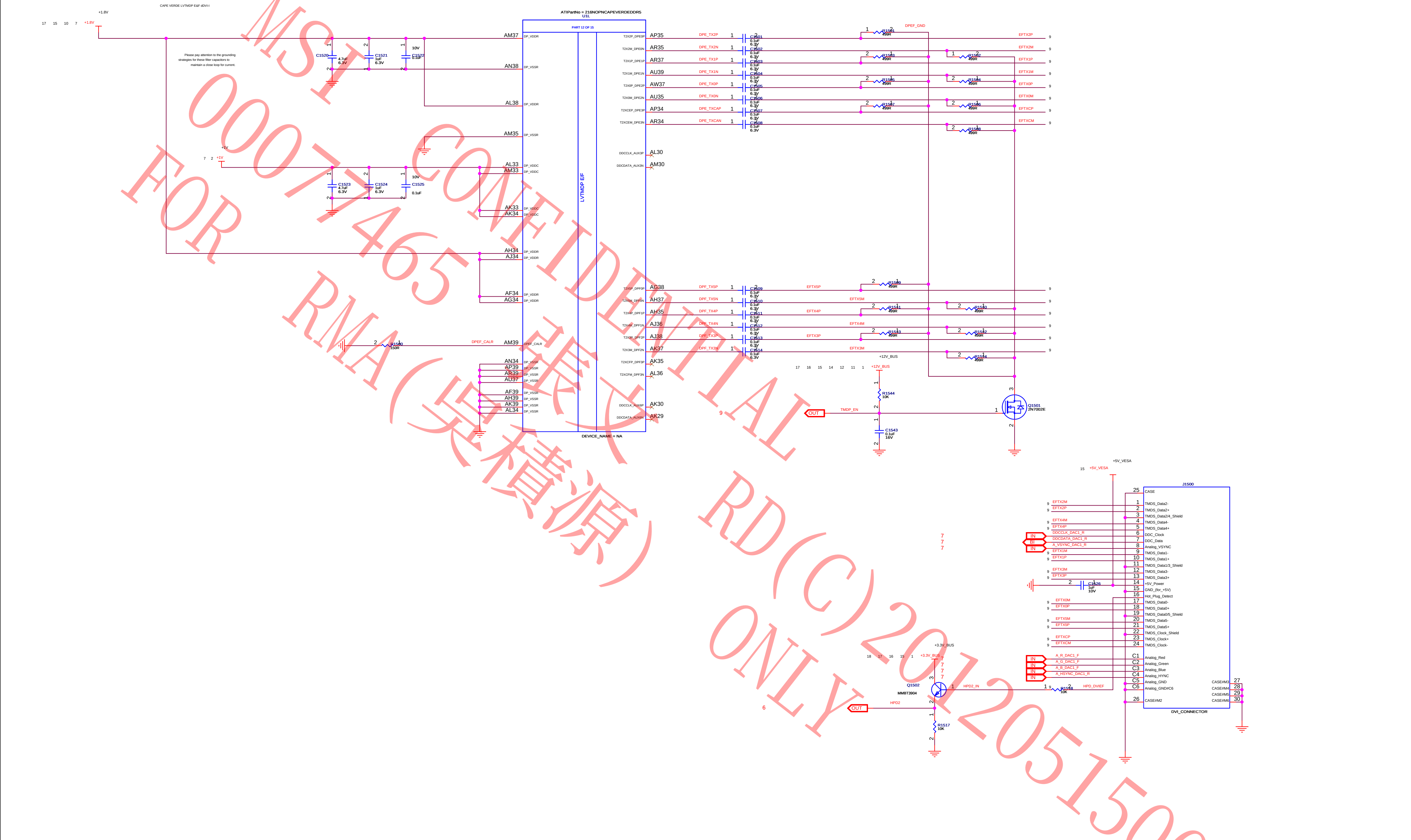
Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size	Document Number		Rev
Custom	2012-03-01-01		01
Date:	Wednesday, April 18, 2012	Sheet 7 of 21	


U1J
PART 10 OF 15
+1.8V
+1V
C2509 4.7uF 6.3V
C2510 1uF 6.3V
C2511 0.1uF 10V
C2515 4.7uF 6.3V
C2516 1uF 6.3V
C2517 0.1uF 10V
Please pay attention to the grounding strategies for these filter capacitors to maintain a close loop for current
AU28 NC_DP_VDDR#10
AV27 DP_VSSR
AV29 NC_DP_VDDR#12
AR28 DP_VSSR
AP31 DP_VDDC
AP32 DP_VDDC
AN33 DP_VDDC
AP33 DP_VDDC
AN24 NC_DP_VDDR#1
AP24 NC_DP_VDDR#6
AP25 NC_DP_VDDR#7
AP26 NC_DP_VDDR#8
DPAB_CALR
AW28 DPAB_CALR
R2500 150R
AN27 DP_VSSR
AP27 DP_VSSR
AP28 DP_VSSR
AW24 DP_VSSR
AW26 DP_VSSR
AN29 DP_VSSR
AP29 DP_VSSR
AP30 DP_VSSR
AW30 DP_VSSR
AW32 DP_VSSR
TMDP A/B
NA
TX2P_DPA0P AT27
TX2M_DPA0N AR26
TX1P_DPA1P AU26
TX1M_DPA1N AV25
TX0P_DPA2P AT25
TX0M_DPA2N AR24
TXCAP_DPA3P AU24
TXCAM_DPA3N AV23
AUX1P AM27
AUX1N AL27
DDC1CLK AM26
DDC1DATA AN26
TX5P_DPB0P AT33
TX5M_DPB0N AU32
TX4P_DPB1P AR32
TX4M_DPB1N AT31
TX3P_DPB2P AV31
TX3M_DPB2N AU30
TXCBP_DPB3P AR30
TXCBM_DPB3N AT29
DDCCLK_AUX4P AL29
DDCDATA_AUX4N AM29
DDC4CLK OUT 7
DDC4DATA BI 7

OVERLAP HDMI WITH DP D

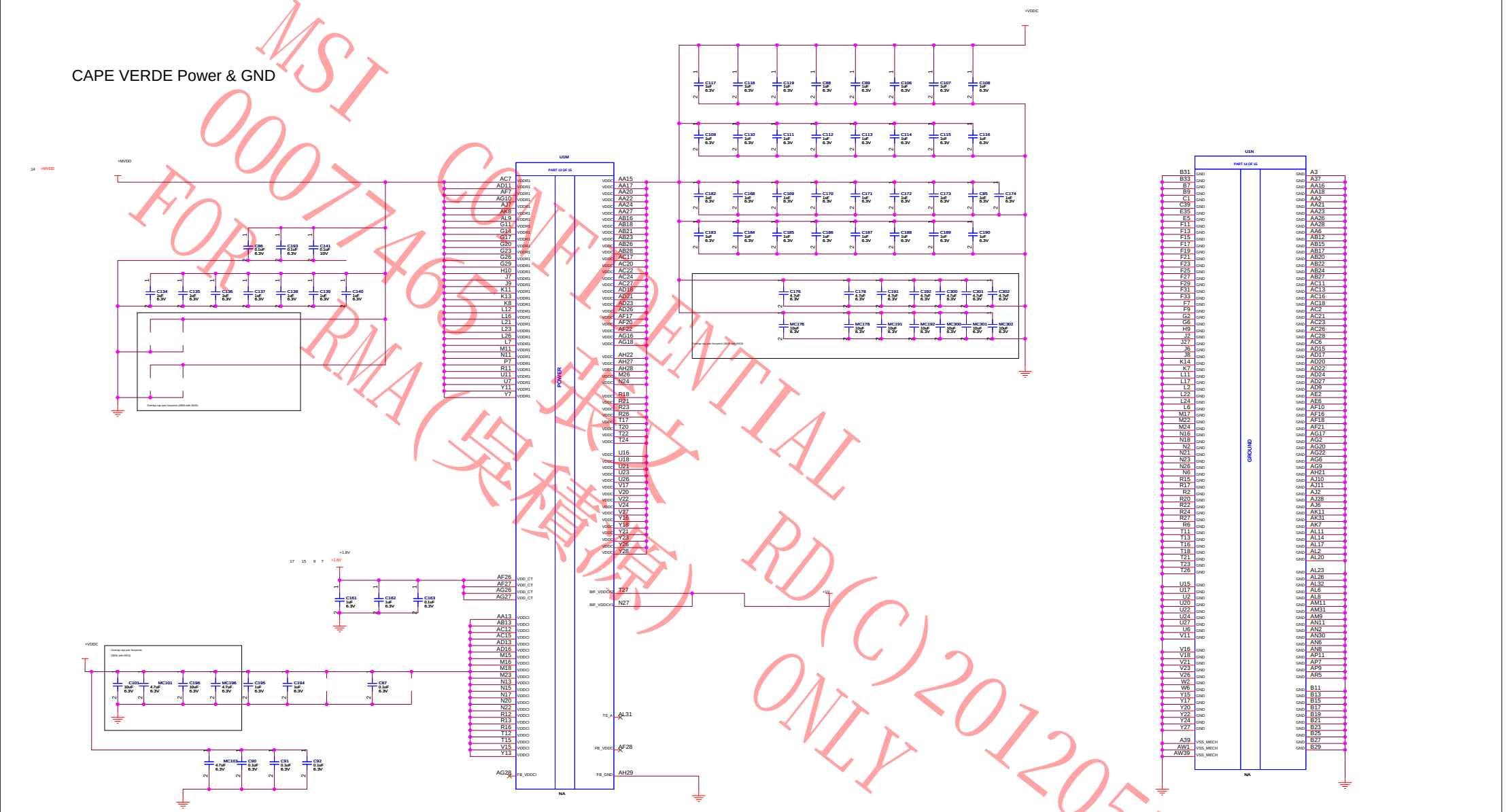
Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size Custom	Document Number 2012-03-01-01		Rev 01
Date: Wednesday, April 18, 2012	Sheet 8 of 21		



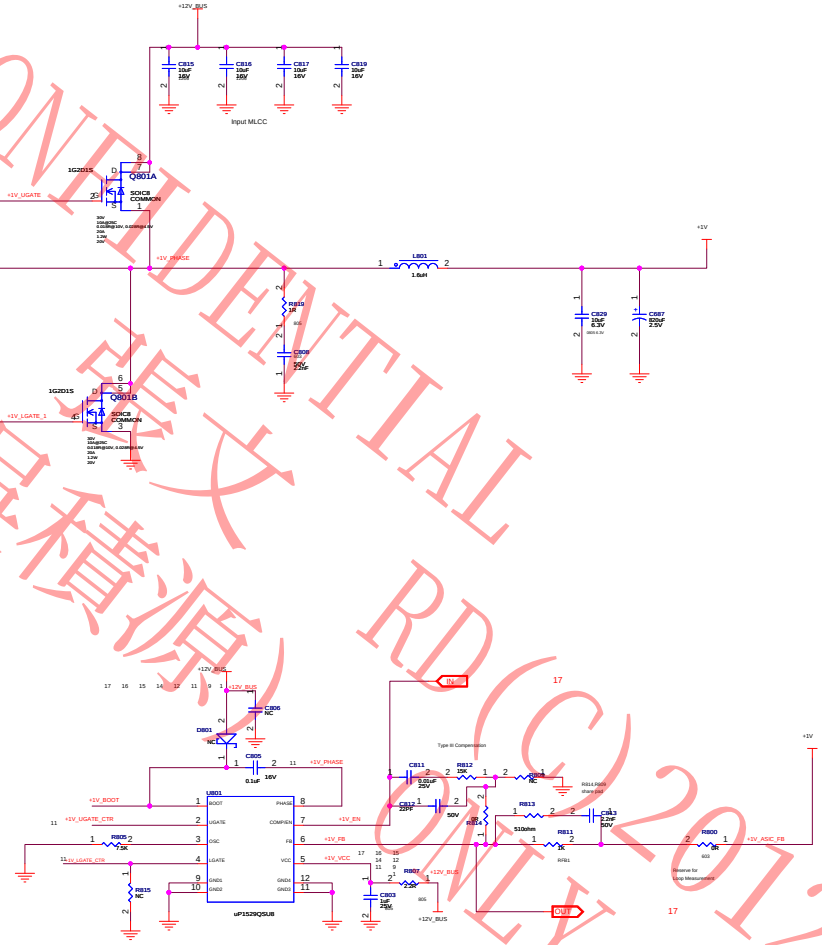


Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size Custom	Document Number 2012-03-01-01		Rev 01
Date: Wednesday, April 18, 2012	Sheet 10	of 21	

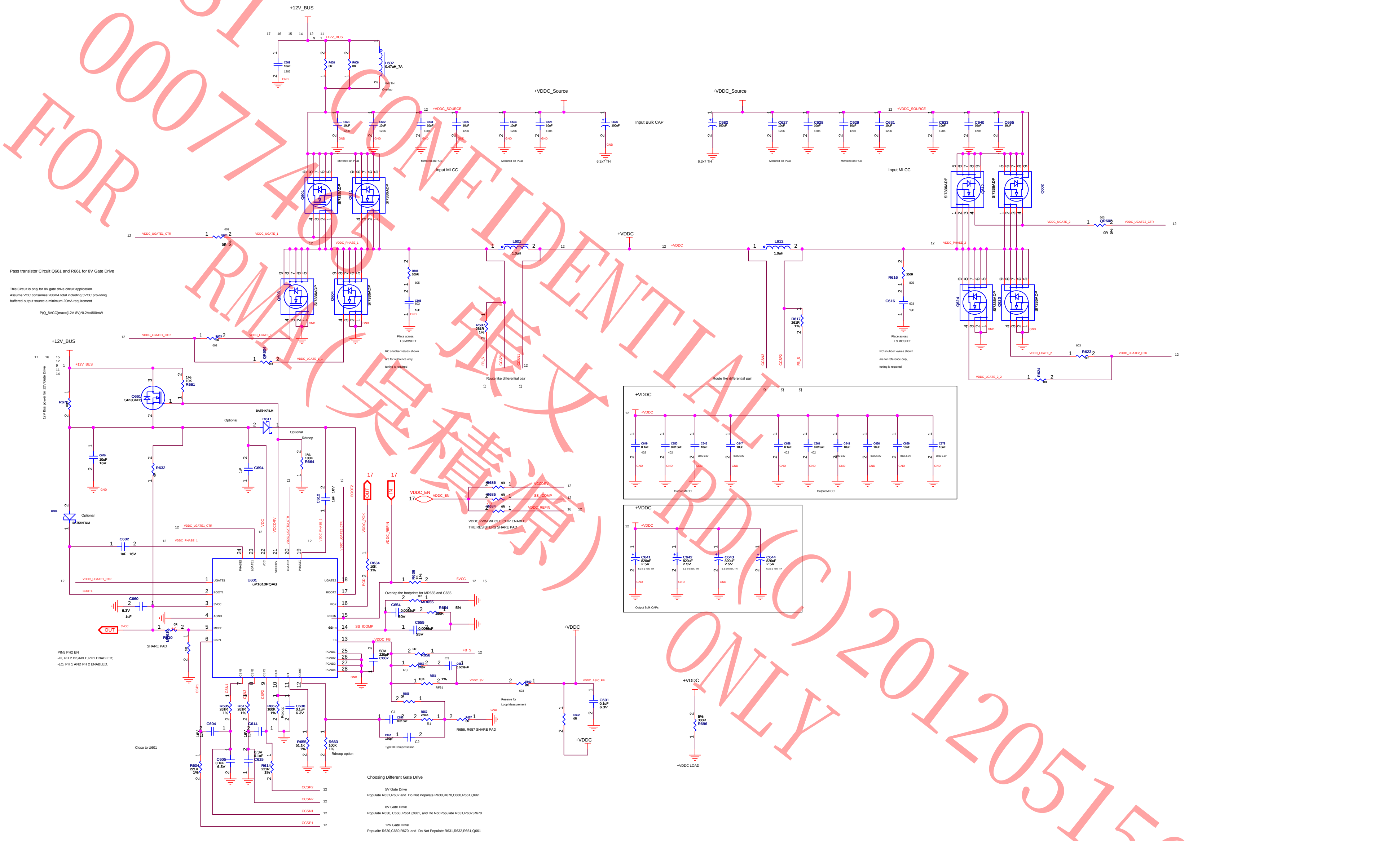
CAPE VERDE Power & GND



Title	MS-V279-4.0 (AMD C445 qual. DDR3)	
Size: Custom	Document Number: 2012-03-01-01	Rev: 01
Date: Wednesday, April 18, 2012	Sheet 11 of 21	

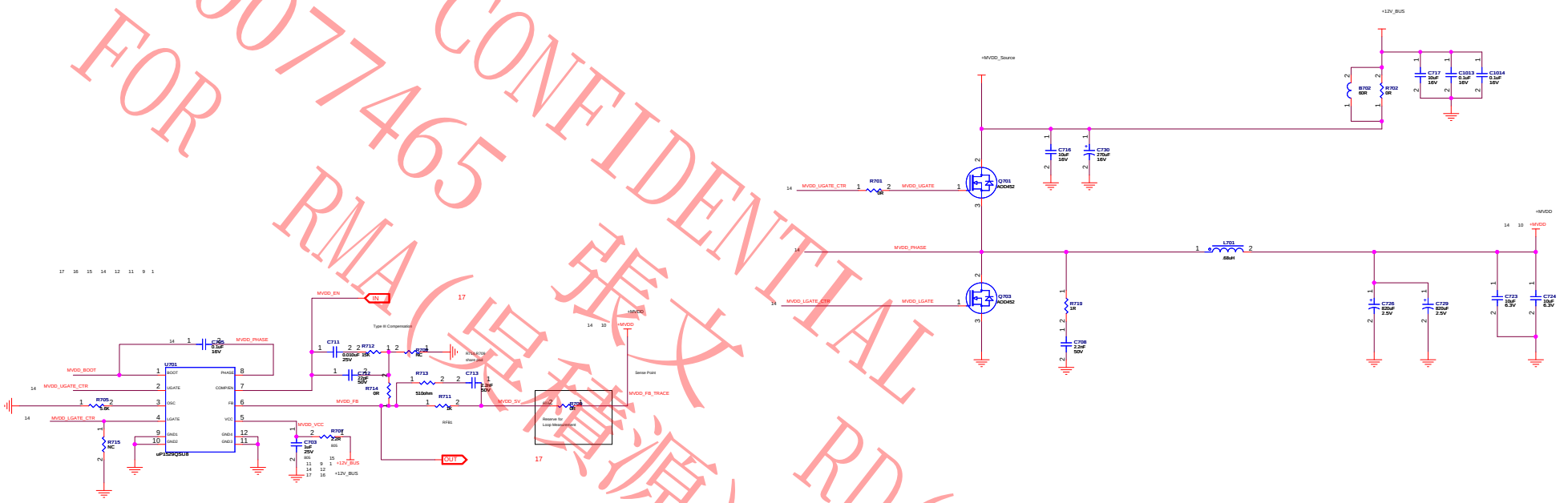


Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size: Custom	Document Number: 2012-03-01-01		Rev: 01
Date: Wednesday, April 18, 2012	Sheet 12 of 21		



Pass transistor Circuit Q661 and R661 for 8V Gate Drive
This Circuit is only for 8V gate drive circuit application.
Input Bulk CAP
Input MLCC
Output MLCC
Output Bulk CAPs
Route like differential pair
VDDC PWM WHOLE CHIP ENABLE
THE RESISTERS SHARE PAD
Overlap the footprints for MR655 and C655
Type III Compensation
Close to U601
Choosing Different Gate Drive
5V Gate Drive
Populate R631,R632 and Do Not Populate R630,R670,C660,R661,Q661
8V Gate Drive
Populate R630, C660, R661,Q661, and Do Not Populate R631,R632,R670
12V Gate Drive
Populate R630,C660,R670, and Do Not Populate R631,R632,R661,Q661
uP1610PQAG

Title	MS-V279-4.0 (AMD C445 qual. DDR3)	
Size Custom	Document Number 2012-03-01-01	Rev 01
Date: Wednesday, April 18, 2012	Sheet 13 of 21	



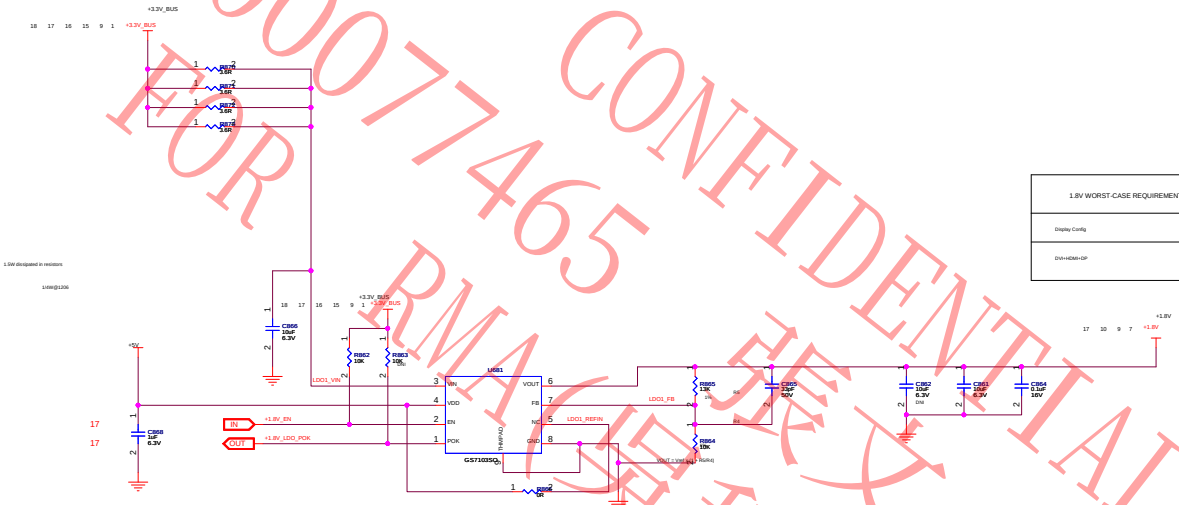
Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size	Document Number		Rev
Custom	2012-03-01-01		01
Date:	Wednesday, April 18, 2012	Sheet 15 of 21	

Linear Regulators

LDO #1: Vin = 3.00V to 3.60V (3.3V +/- 9%) Vout = +1.8V +/- 2%; Iout = 1.6A (TBV) RMS MAX

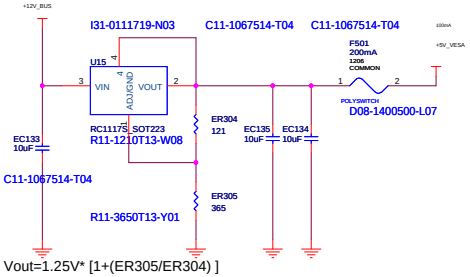
PCB: 50 to 70mm sq. copper area for cooling

Regulators for +5V, +5V_VESA and +5V_VESA2



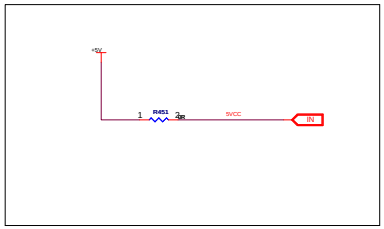
1.8V WORST-CASE REQUIREMENT

Display Config	Est. Current
DVI+HDMI+DP	1310mA



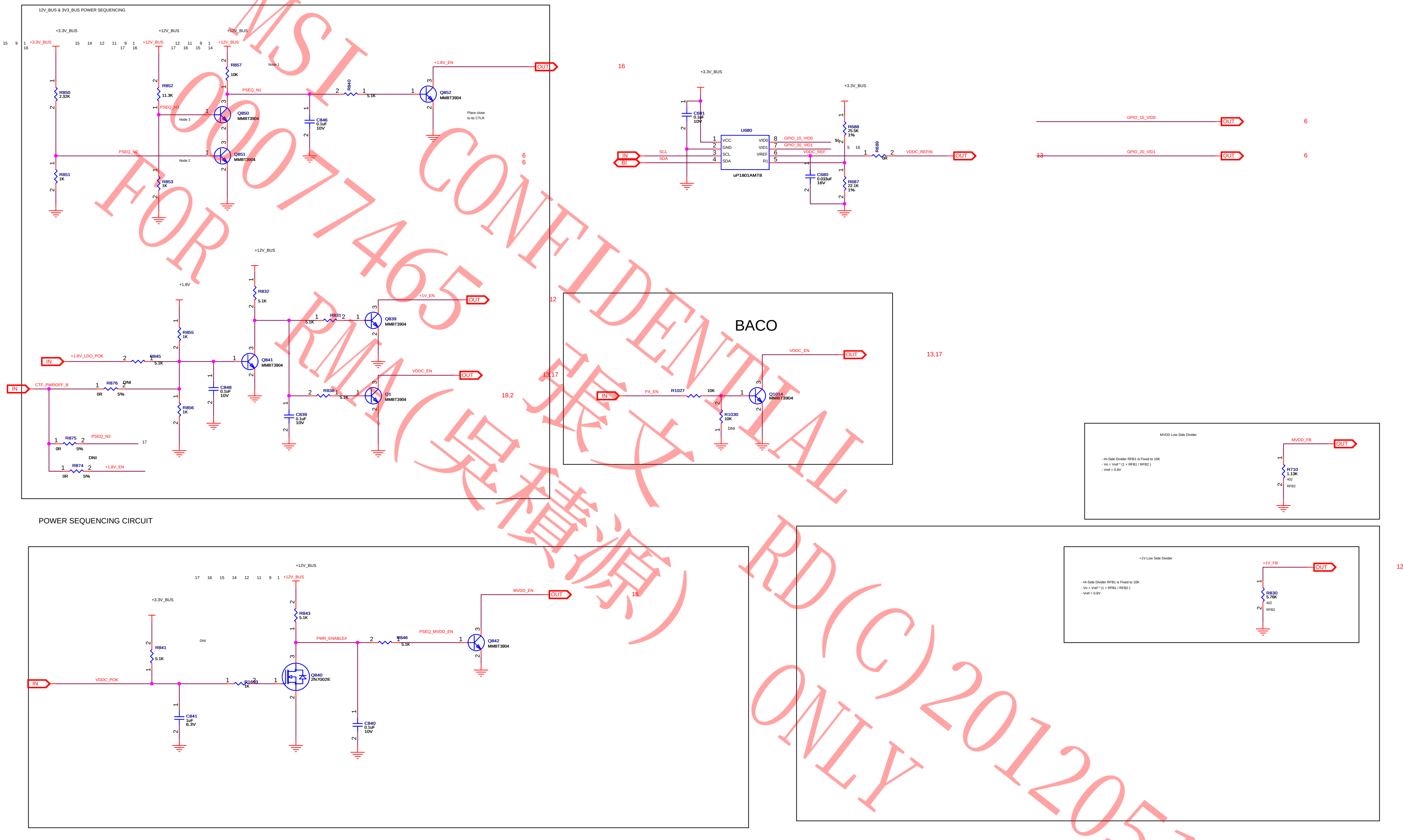
Vout=1.25V* [1+(ER305/ER304)]

Change +5V REGULATOR to A1117
copy from MS-V208-5.0



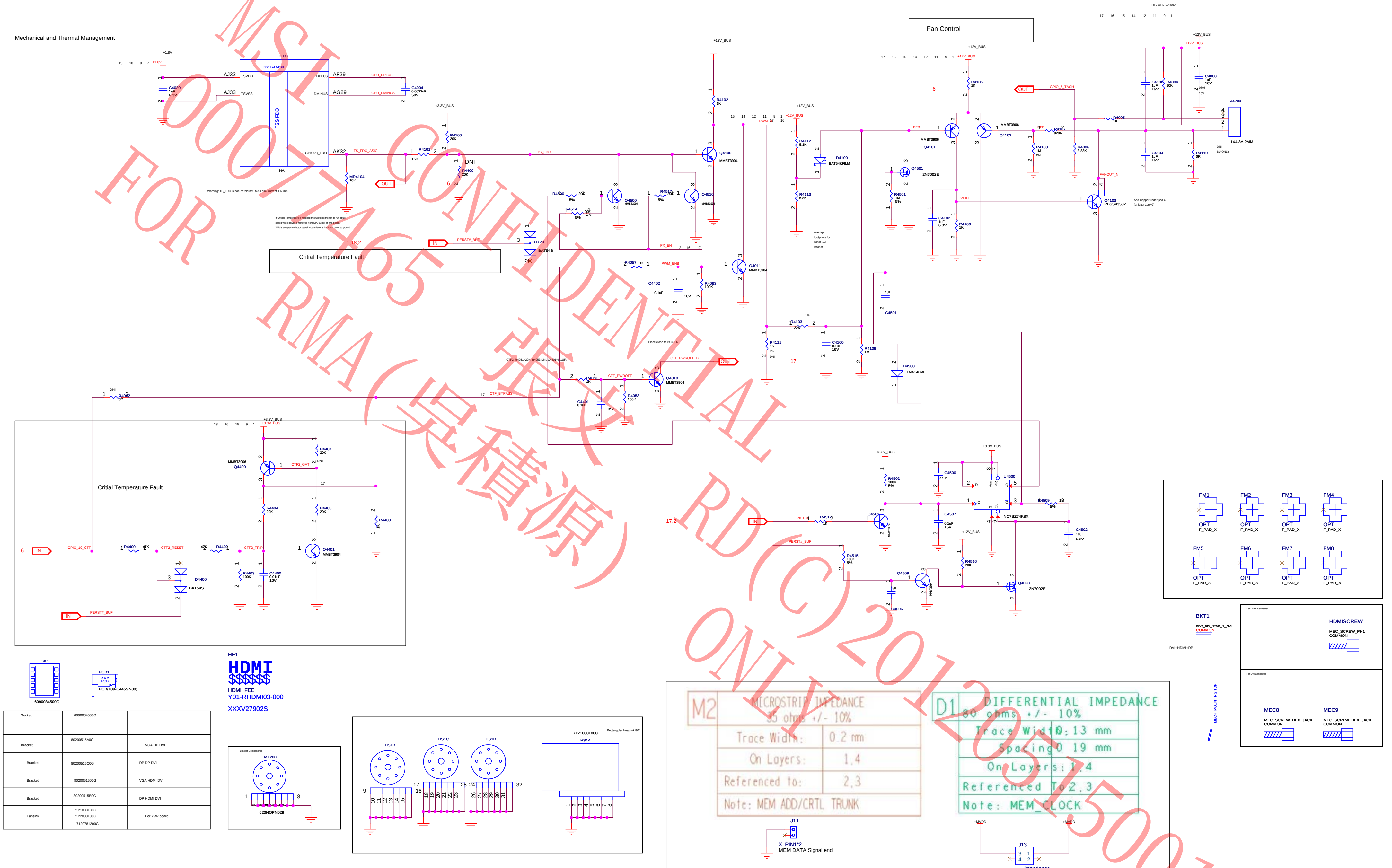
Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size	Document Number		Rev
Custom	2012-03-01-01		01
Date:	Wednesday, April 18, 2012	Sheet 16 of 21	

Power Management - Power Gating and Dynamic Voltage Control



Title	MS-V279-4.0 (AMD C445 qual. DDR3)
Size: Custom	Document Number: 2012-03-01-01
Rev	01
Date:	Wednesday, April 18, 2012
Sheet	17 of 21

Mechanical and Thermal Management

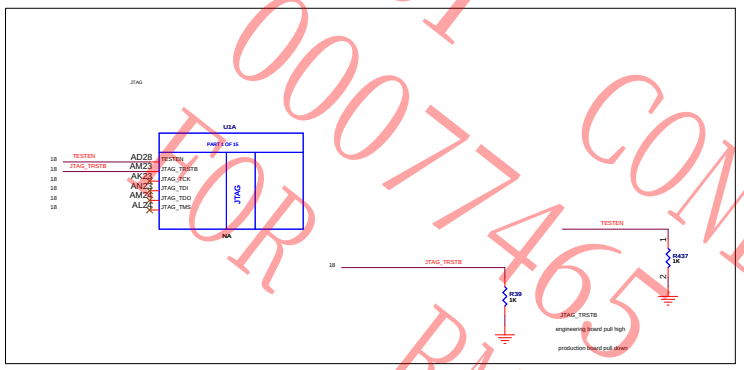


Fan Control
Critial Temperature Fault
Critial Temperature Fault
U1O
PART 15 OF 15
TSS FDO
AJ32
AJ33
TSVDD
TSVSS
DPLUS
DMINUS
GPIO28_FDO
AF29
AG29
AK32
GPU_DPLUS
GPU_DMINUS
TS_FDO_ASIC
TS_FDO
C4020
C4004
R4100
R4101
R4409
MR4104
Q4100
MMBT3904
Q4500
Q4510
Q4011
Q4010
D1720
BAT54S
R4102
R4112
R4113
D4100
BAT54KFILM
Q4101
Q4102
MMBT3906
Q4501
2N7002E
Q4103
PBSS4350Z
R4105
R4107
R4108
R4006
R4005
R4004
C4008
C4106
C4104
R4110
J4200
1X4 3A 2MM
GPIO_6_TACH
PWM_EN
PERST#_BUF
PX_EN
PWM_ENB
CTF_PWROFF
CTF_PWROFF_B
CTF_BYPASS
R4103
R4111
C4100
R4109
D4500
1N4148W
C4501
U4500
NC7SZ74K8X
C4500
C4507
R4502
R4509
C4502
Q4503
R4515
Q4509
R4516
Q4508
C4506
Q4400
R4407
R4404
R4405
R4408
Q4401
R4400
R4403
C4400
D4400
GPIO_19_CTF
CTF2_GAT
CTF2_RESET
CTF2_TRIP
Warning: TS_FDO is not 5V tolerant. MAX sink current 1.65mA
FM1
FM2
FM3
FM4
FM5
FM6
FM7
FM8
OPT
F_PAD_X
BKT1
brkt_atx_1tab_1_dvi
HDMISCREW
MEC_SCREW_PH1
MEC8
MEC9
MEC_SCREW_HEX_JACK
SK1
6090034500G
PCB1
PCB(109-C44557-00)
HF1
HDMI
HDMI_FEE
Y01-RHDMI03-000
XXXV27902S
MT200
620NOPN029
HS1B
HS1C
HS1D
HS1A
7121000100G
Rectangular Heatsink 8W
M2
MICROSTRIP IMPEDANCE
35 ohms +/- 10%
Trace Width: 0.2 mm
On Layers: 1,4
Referenced to: 2,3
Note: MEM ADD/CRTL TRUNK
D1
DIFFERENTIAL IMPEDANCE
80 ohms +/- 10%
Trace Width: 0.13 mm
Spacing: 0.19 mm
On Layers: 1,4
Referenced To: 2,3
Note: MEM_CLOCK
J11
X_PIN1*2
MEM DATA Signal end
J13
impedence
MEM_CLK

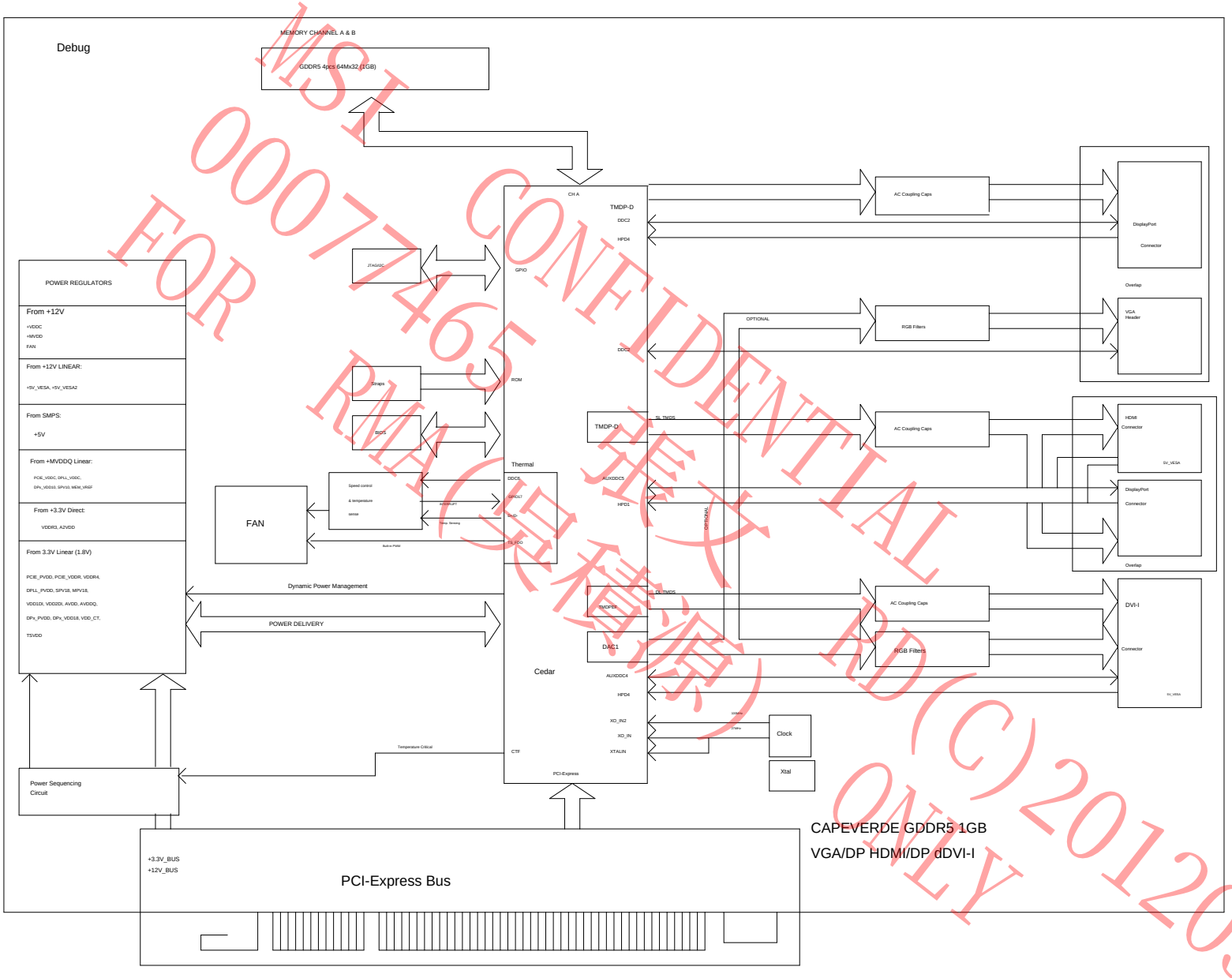
Socket	6090034500G	
Bracket	80200515A0G	VGA DP DVI
Bracket	80200515C0G	DP DP DVI
Bracket	8020051500G	VGA HDMI DVI
Bracket	80200515B0G	DP HDMI DVI
Fansink	7121000100G 7122000100G 7120781200G	For 75W board

Title	MS-V279-4.0 (AMD C445 qual. DDR3)	
Size: Custom	Document Number: 2012-03-01-01	Rev: 01
Date: Wednesday, April 18, 2012	Sheet 18 of 21	

(19) Debug Circuits



Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size: Custom	Document Number: 2012-03-01-01		Rev: 01
Date: Wednesday, April 18, 2012	Sheet 19 of 21		



Title	MS-V279-4.0 (AMD C445 qual. DDR3)		
Size	Document Number		Rev
Custom	2012-03-01-01		01
Date:	Tuesday, April 10, 2012	Sheet 20 of 21	

TITLE	CAPE VERDE PRO GDDR5 64Mx32 dDVI-I+HDMI/DP+DP/VGA	SCHEMATIC NO. 105-C445XX-00	DATE
REVISION HISTORY	NOTE: THIS SCHEMATIC REPRESENTS THE PCB, IT DOES NOT REPRESENT ANY SPECIFIC SKU. FOR STUFFING OPTIONS (COMPONENT VALUES, DNI PLEASE CONSULT THE PRODUCT SPECIFIC BOM. PLEASE CONTACT AMD REPRESENTATIVE TO OBTAIN LASTEST BOM CLOSEST TO THE APPLICATION DESIRED.		REV P04

SCH REV	PCB REV	DATE	REVISION DESCRIPTION
00	00A	2011/07/11	Initial CAPE VERDE schematic,
01	00B	2011/08/23	1.Update bracket DP HDMI DVI to 80200515B0G; 2. Add C4401/C4402 3. wire GPIO15/GPIO20 to I2C DAC 4. remove BIF_VDDC
02	00C	2011/09/27	1. add BACO fan delay circuit; 2. Update 1.8V LDO symbol to GS7103; 3. Remove some debug circuit;
03	00D	2011/11/15	1. update BACO fan delay circuit;
04	00	2011/11/28	1. update CTF to shut off 1.8v;

Title: MS-V279-4.0 (AMD C445 qual. DDR3)		
Size: Custom	Document Number: 2012-03-01-01	Rev: 01
Date: Tuesday, April 10, 2012	Sheet 21 of 21	