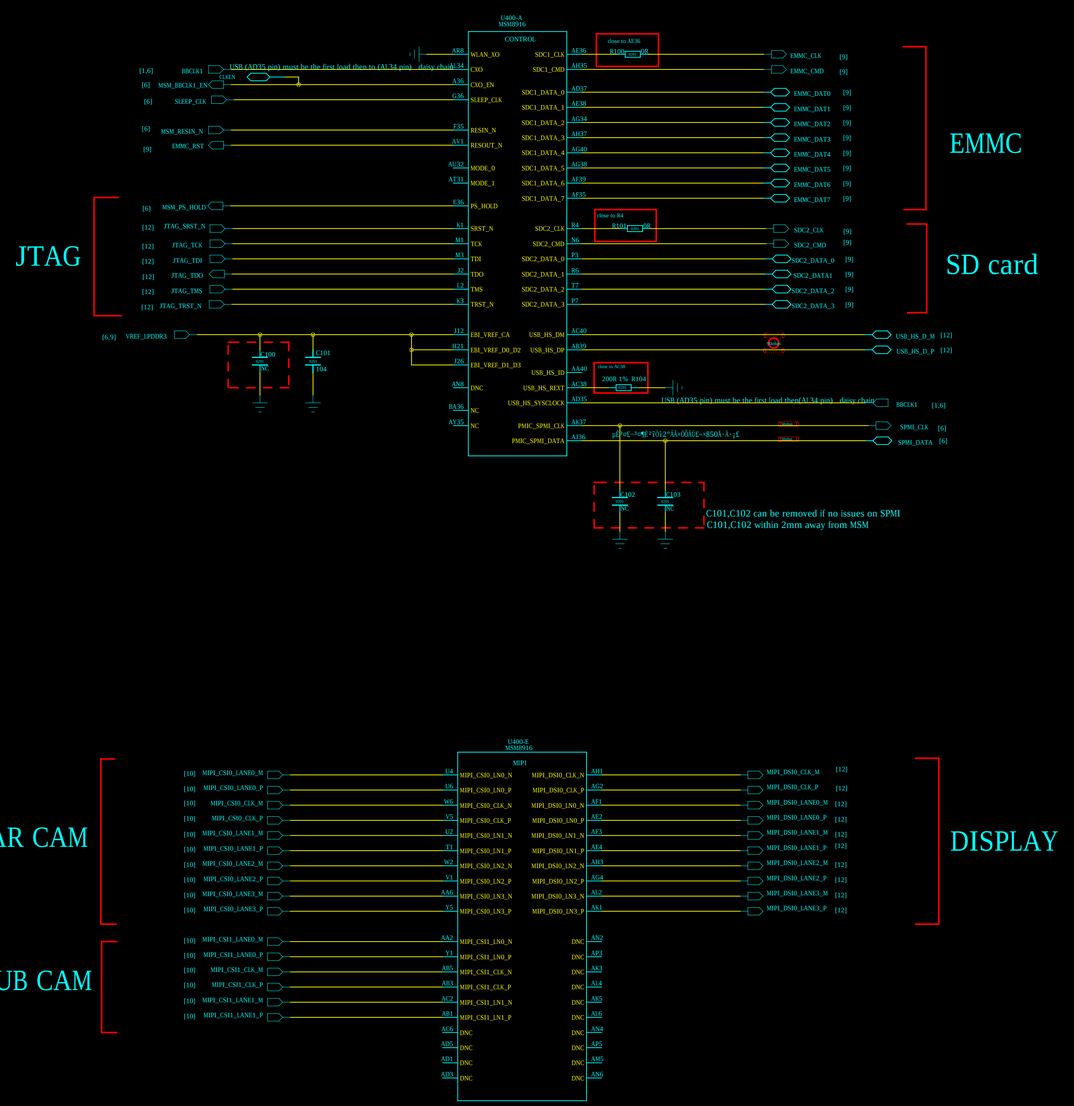
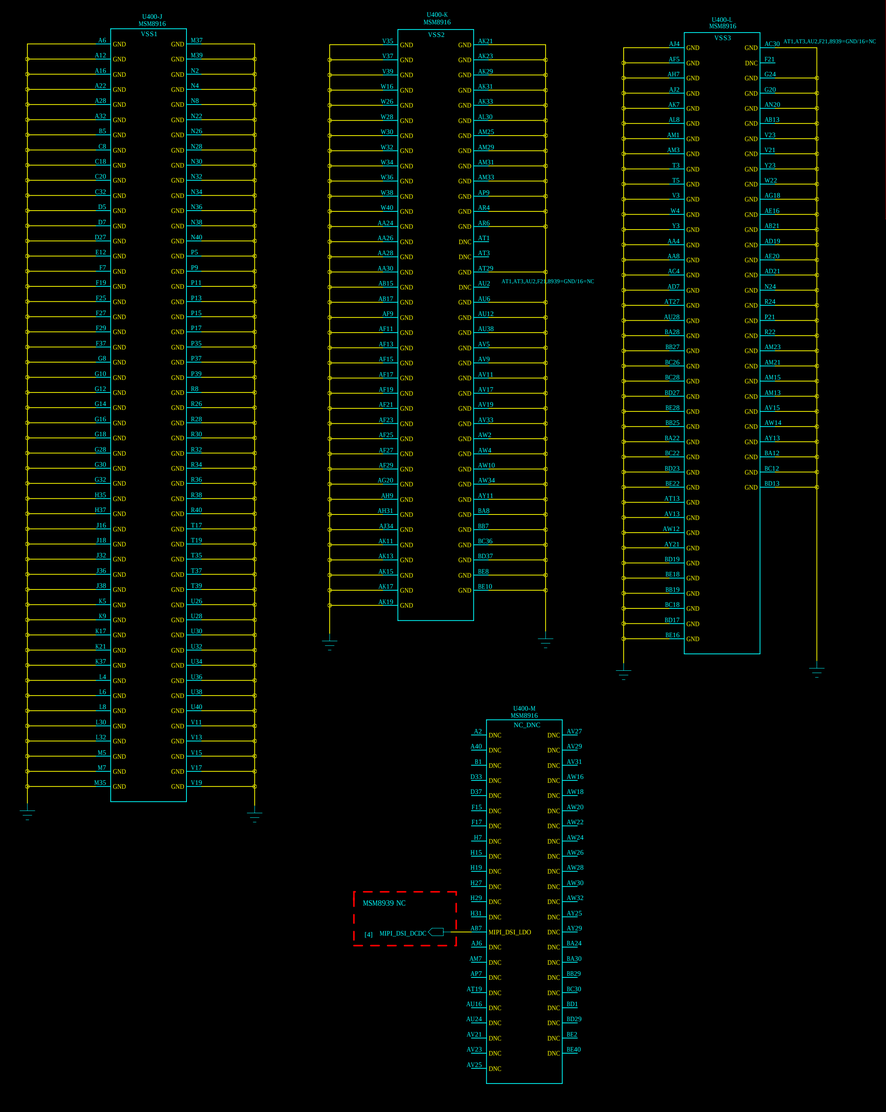
MSM8916 BASEBAND



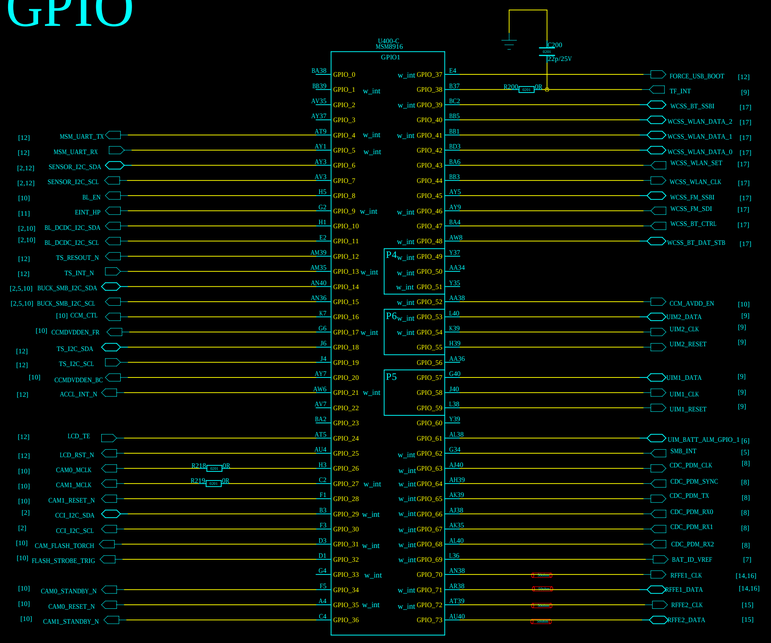


REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

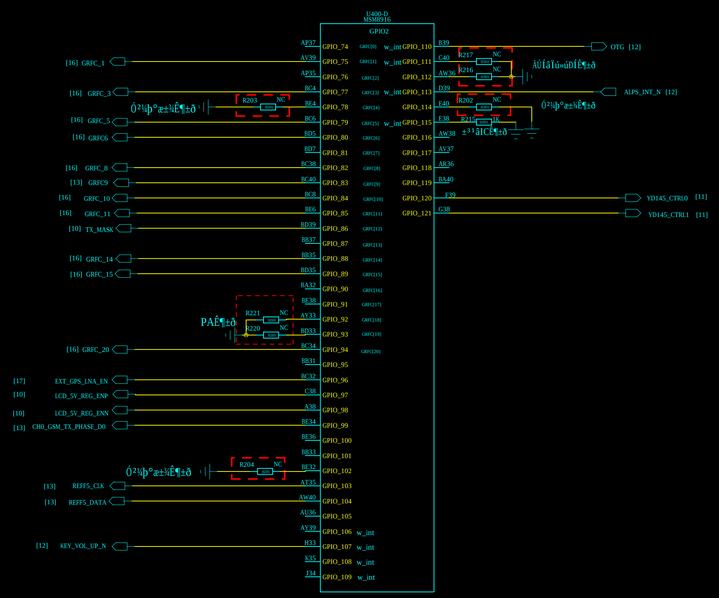
DRAWN:	DATED:	COMPANY: vivo	
CHECKED:	DATED:	TITLE: PD1510AM-A	
QUALITY CONTROL:	DATED:	CODE:	SIZE: D / DRAWING NO: / REV: A
RELEASED:	DATED:	SCALE:	SHEET:1 OF 18

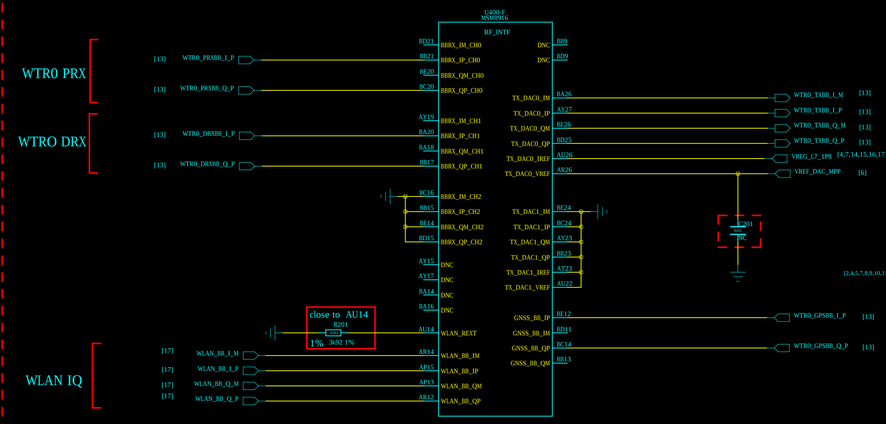
MSM8916 GPIO



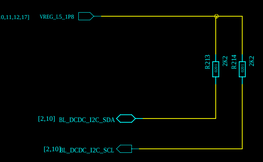
wakeup-INT:GPIO_1,4,5,9,13,17,21,27,29,31,33,35,37,39,41,46,48~54,62~69,71,72,106~111,113,115

Power domain:P4=GPIO49/50/51--L16_UIM3
P5=GPIO57/58/59--L14_UIM1
P6=GPIO53/54/55--L15_UIM2
P3=other--L5

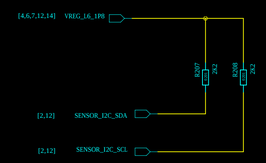




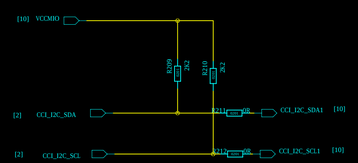
LCD BL/CCM Flash



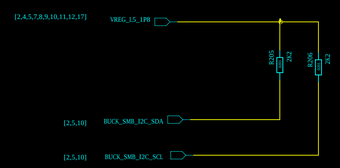
SENSORS



CAMERAS



SMB



PA	GPIO_93/R220	GPIO_92/R221
SKY	NC	NC
RFMD	1K	NC
HRTXAH	NC	1K

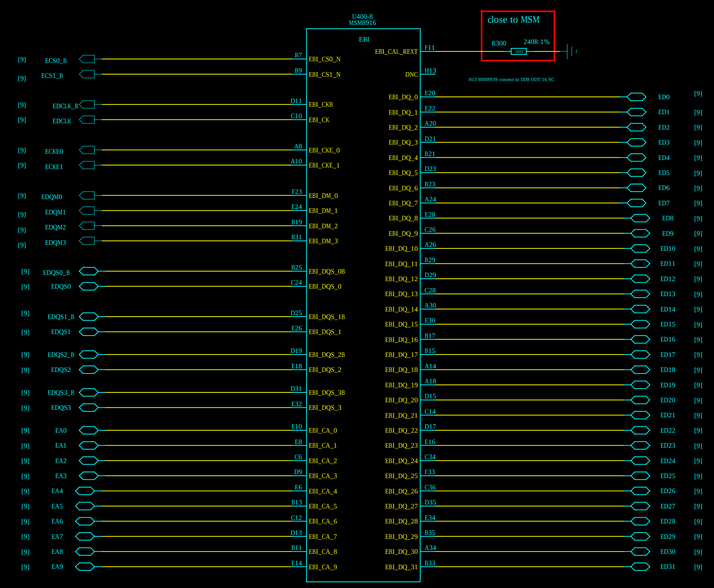
NC´úæïæ¶Ó¼¶È¿ÍDïµÕÊ¯1K´úæïæ¶Ó¼¶È¿Ïñ½Ó1KÍÃÀ¬µç³è

	R217	R216		R202	R203	R204	¹úÍúÓ	TDD	FDD	CDMA	TDSCDMA	WCDMA	GSM
ÍãÍú	1K	NC	PD1510F_EX(IN)	1K	NC	NC	Ó¡¶È	B40	B1/3	/	/	B1/5/8	850/900/1800/1900
			PD1510F_EX	NC	1K	NC	Ó¡Åá ÅâµíÉ Ó½ÃÍ Ì©¹ú	ÎÞ	B1/3/8	/	/	B1/5/8	850/900/1800/1900
			ÍãÍúÉ«£µ¶Î	1K	1K	NC	ÅíÀ¯¡¢-£ÃÉ±ö¡¢È«ÅÉ	B40	B1/3/5/7/8	/	/	B1/5/8	850/900/1800/1900
ÅÚÍú	NC	NC	ÅÚÍúV&F	NC	NC	NC		B40/B39B41	B1/3	BCO	B34/39	B1/8	850/900/1800/1900
			ÅÚÍúLÉýÅ£	NC	NC	1K		B38/39/40	/	/	B34/39	/	850/900/1800/1900

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

COMPANY:	vivo
TITLE:	PD1510AM-A
DRAWN:	DATED:
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:
CODE:	SIZE: D
DRAWING NO:	REV: A
SCALE:	SHEET:2 OF 18

MSM8916 EBI INTERFACE



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DRAWN:	DATED:
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:

COMPANY: vivo

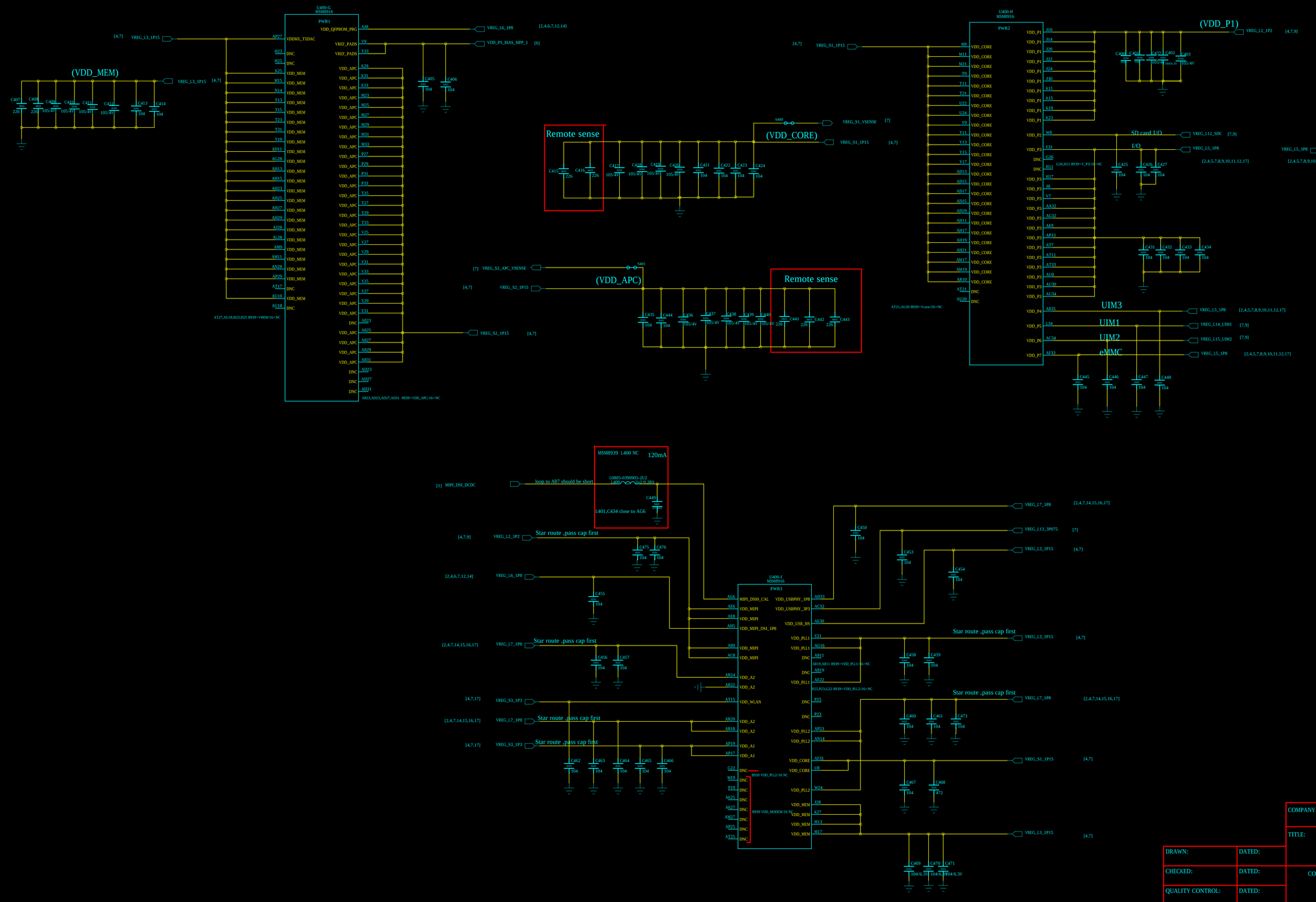
TITLE: PD1510AM-A

CODE:	SIZE:	DRAWING NO:	REV:
	D		A

SCALE: SHEET: 8F 18

MSM8916 POWER

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

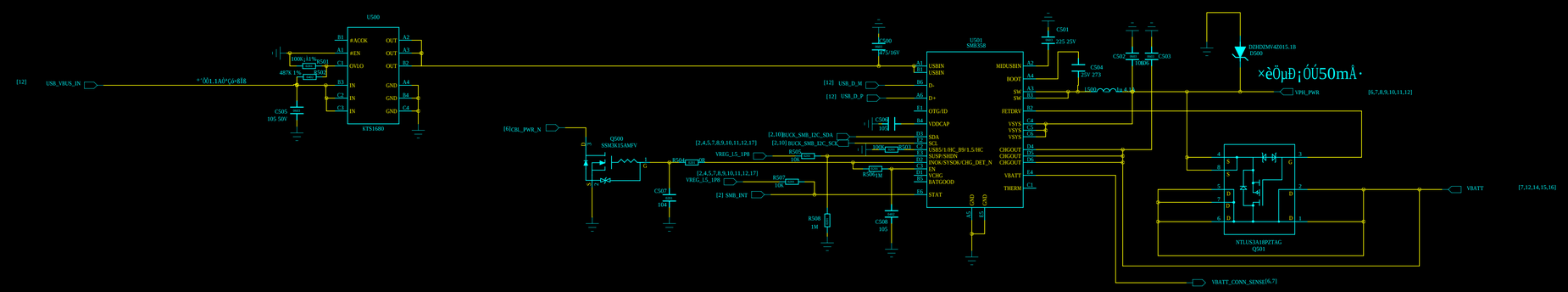


COMPANY:	vivo		
TITLE:	PD1510AM-A		
DRAWN:	DATED:	CODE:	SIZE: D
CHECKED:	DATED:	DRAWING NO:	REV: A
QUALITY CONTROL:	DATED:		
RELEASED:	DATED:	SCALE:	SHEET:4 OF 18

SWITCH CHARGE SMB358

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

BOM CHANGE:
C503->25V
C504->25V
C506->25V
L501->2.9A
C510->25V

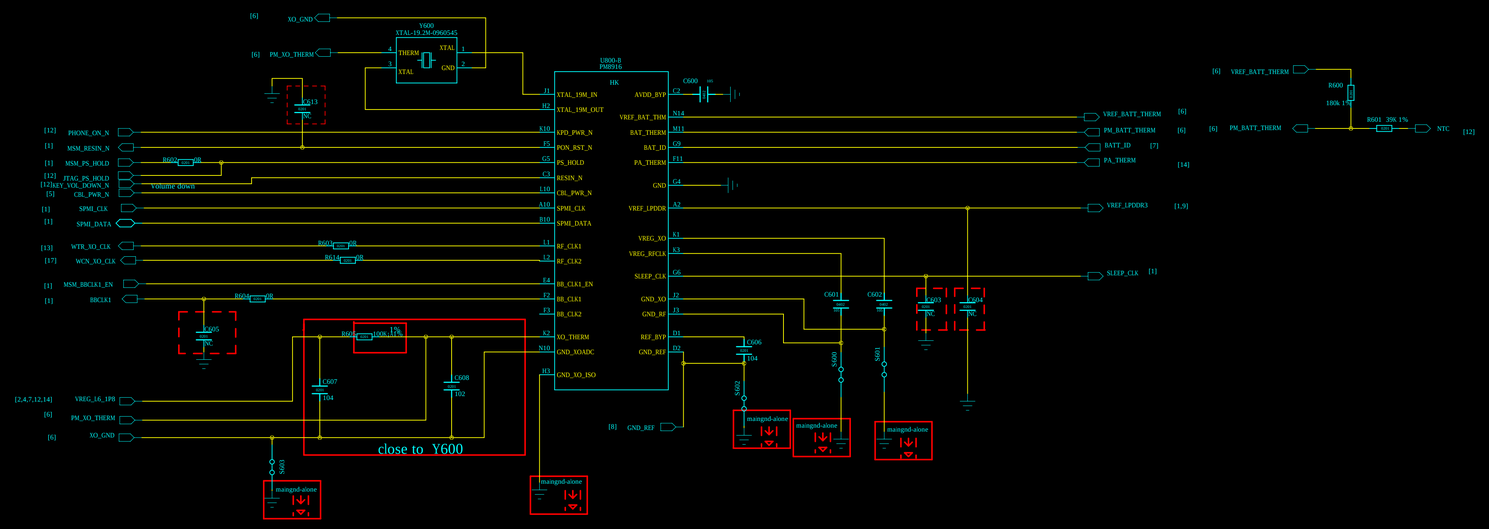


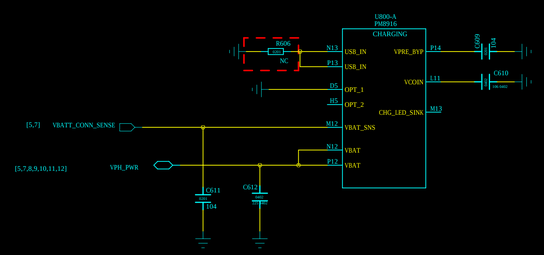
1010111+R/W SMB358

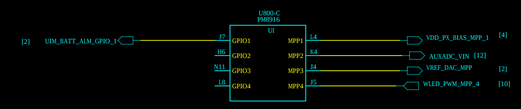
DRAWN:	DATED:	COMPANY: vivo	
CHECKED:	DATED:	TITLE: PD1510AM-A	
QUALITY CONTROL:	DATED:	CODE:	SIZE: D / DRAWING NO: / REV: A
RELEASED:	DATED:	SCALE:	SHEET: 6 of 18

PM8916 CONTROL AND CLOCK

Y600ÀëPMU±£³Ö1cm¾àÀë







Pins	HI Z	GND
OPT_1	No SMB1360	SMB1360 present
OPT_2	No Ext APC buck (S5)	Ext APC buck (S5) present

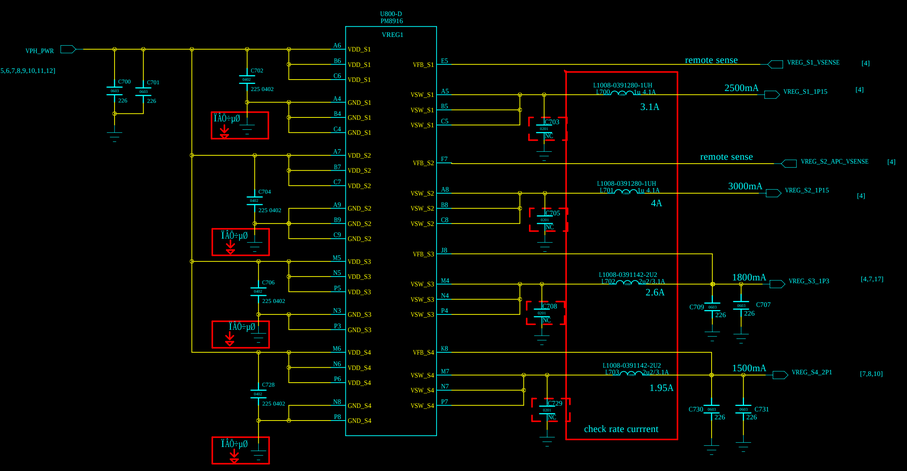
BOM CHANGE:Y600

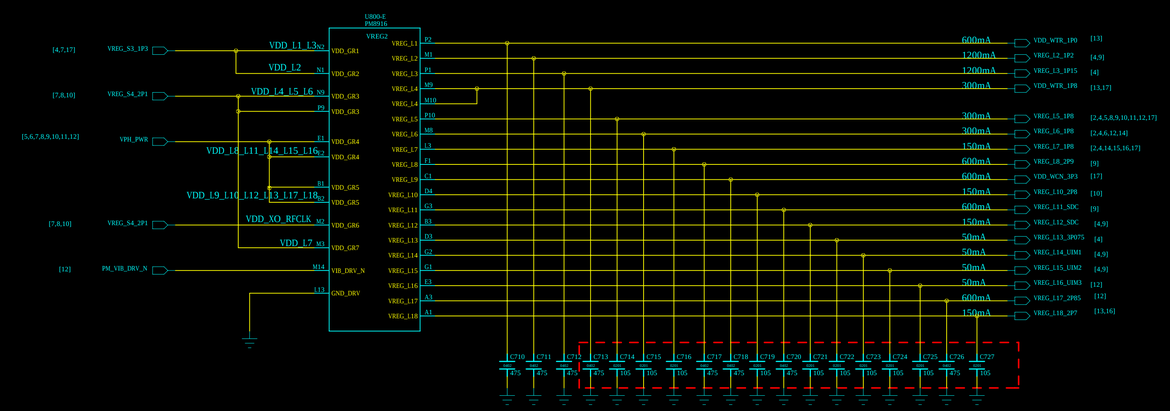
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DRAWN:	DATED:	COMPANY: vivo	
CHECKED:	DATED:	TITLE: PD1510AM-A	
QUALITY CONTROL:	DATED:	CODE:	SIZE: D / DRAWING NO: / REV: A
RELEASED:	DATED:	SCALE:	SHEET: 6 of 18

PM8916 SMPS AND LDO

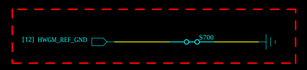
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



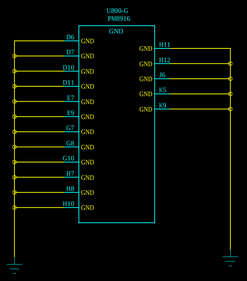


PSEUDO CAPLESS LDOs
L4,L5,L6,L7,L8,L9,L10,L11,L12,L13,L14,L15,L16,L17,L18

BOM CHANGE:L701->3.1A ,L702->4A

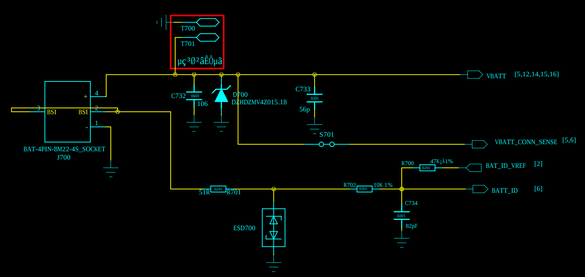


º ì ÍâICµÅµØ¸ú º ì ÍâµçÔ´VDD×ß²î ·Ôµ½PMIC´¡ ÏÅÃ÷µØÉ¬×ßÏß¿í¶ÈÔª´óÚÚ0.15mm



	Default (V)	Specified (V)	Rated (mA)
L1	1.225		600
L2	1.15		1200
L3	1.2		1200
L4	2.050		300
L5	1.8		300
L6	1.8		300
L7	1.8		150
L8	2.9		600
L9	3.3		600
L10	2.7		150
L11	2.8		600
L12	2.8		150
L13	3.075		50
L14	1.8		50
L15	1.8		50
L16	1.8		50
L17	2.85		600
L18	2.7		150
S1	1.15		2500
S2	1.15		3000
S3	1.3		1800
S4	2.1		1500

BATTERY CONNECTOR

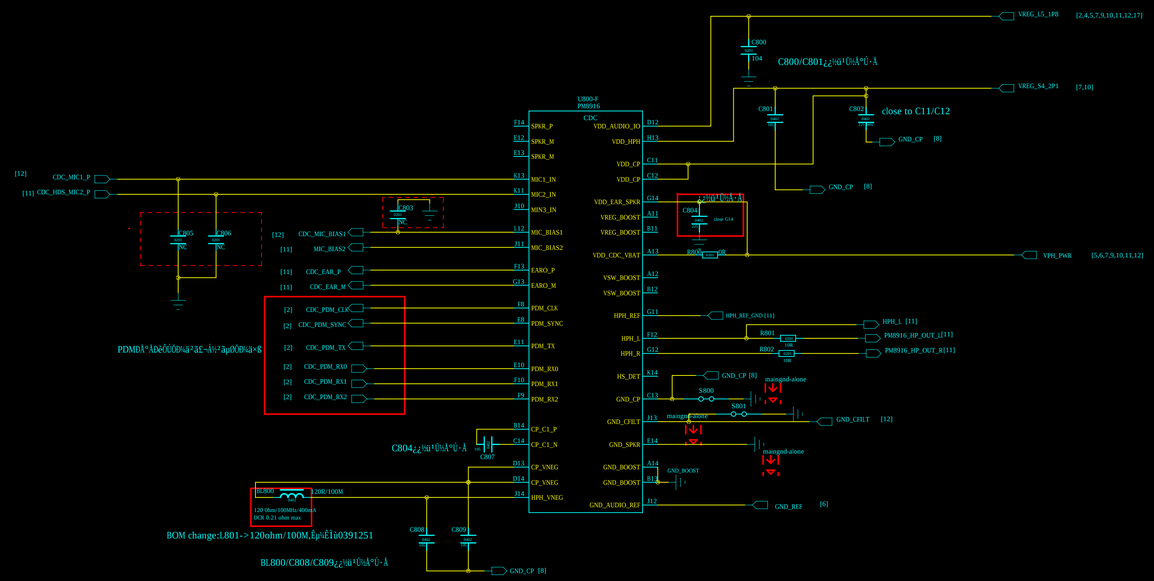


DRAWN:	DATED:
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:

COMPANY: vivo			
TITLE: PD1510AM-A			
CODE:	SIZE: D	DRAWING NO:	REV: A
SCALE:		SHEET:7 OF 18	

PM8916 AUDIO

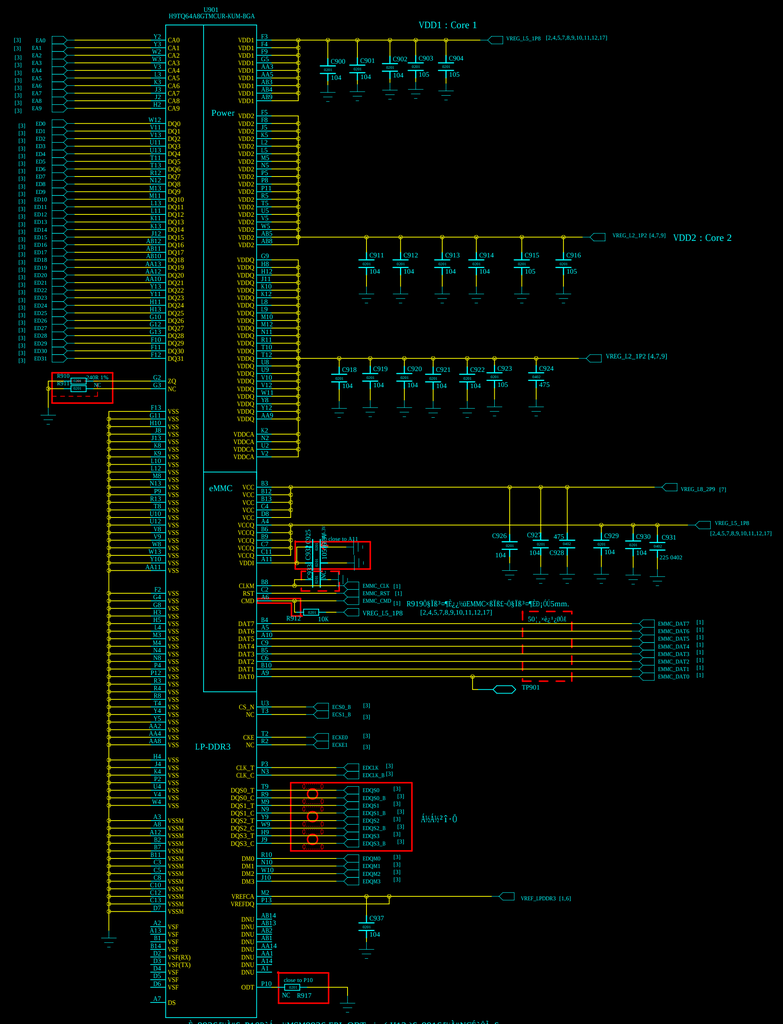
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



DRAWN:	DATED:	COMPANY: vivo	
CHECKED:	DATED:	TITLE: PD1510AM-A	
QUALITY CONTROL:	DATED:	CODE:	SIZE: D / DRAWING NO: / REV: A
RELEASED:	DATED:	SCALE:	SHEET: 8 OF 18

MCP(DDR3 8+8)

1. VCC : Core Voltage 2.7v ~ 3.6v
2. VCCQ : IO Voltage 1.7v~1.95v (low voltage range)
   2.7v~3.6v(high voltage range)



samsung	hynix/MT29F22Z2
R905/240R	R905/240R
R914/NC	R914/240R

eMMC+LPDDR3

162/186 Ball, 0.5mm pitch

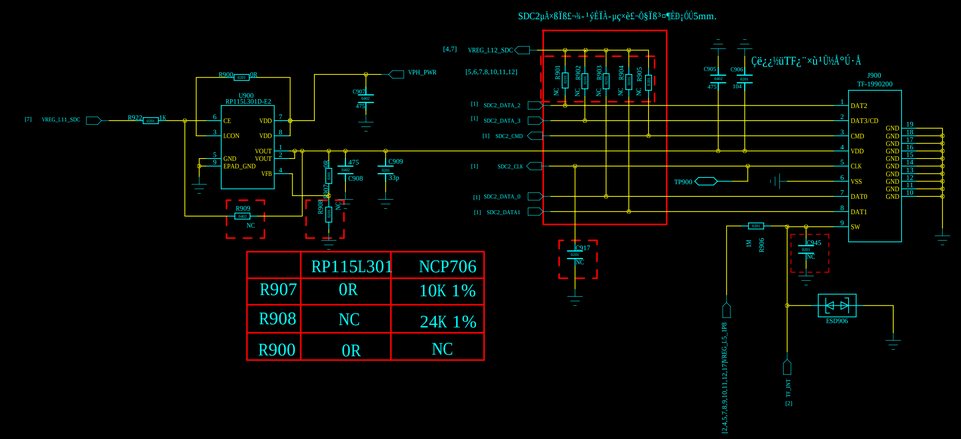
VDD1=1.8V
VDD2=1.20V
VDDCA=1.2V
VDDQ= 1.20V

EMCP¹©£°0886302 IC H9TQ65A8JTMCUR-KTM FBGA

EMCP¶þ¹©£°0886361 IC MT29TZZZ8D5BKFAH-125 W.95K VFBGA

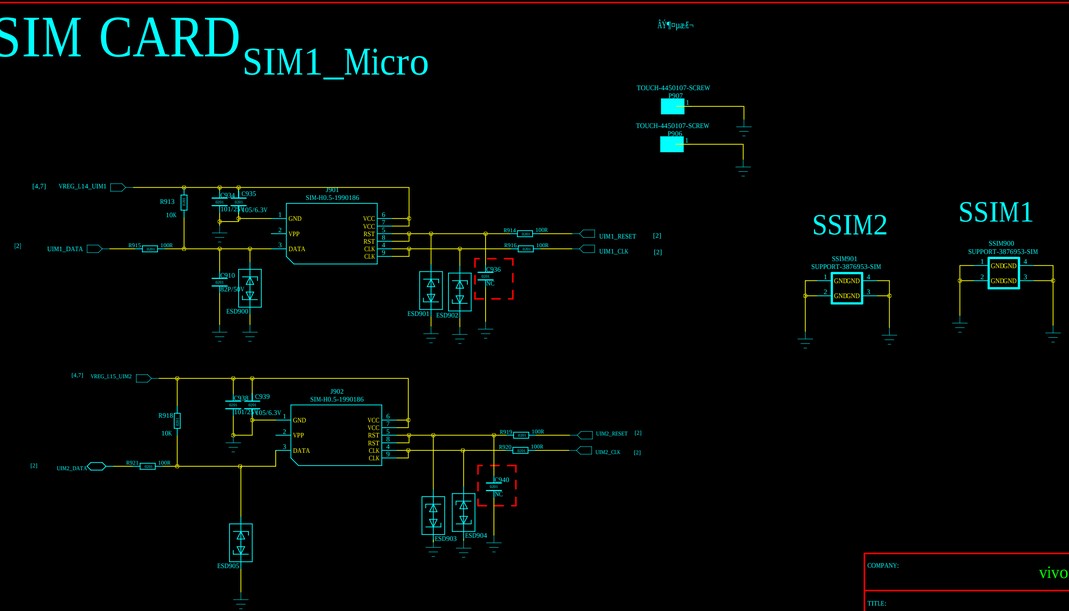
eMMC	C932	C925	R911
Micron/0886361	105	104	240R
Hynix/0886302	NC	104	NC
Toshibar/0886474	225	NC	NC
Samsung/0886501	105	105	NC
0886611	104	NC	NC

1. VCC : Core Voltage 2.7v ~ 3.6v
2. VCCQ : IO Voltage 1.7v~1.95v (low voltage range)
   2.7v~3.6v(high voltage range)



	RP115L301	NCP706
R907	0R	10K 1%
R908	NC	24K 1%
R900	0R	NC

SIM CARD SIM1_Micro



eMMC+LPDDR3

162/186 Ball, 0.5mm pitch

VDD1=1.8V
VDD2=1.20V
VDDCA=1.2V
VDDQ= 1.20V

EMCP¹©£°0886302 IC H9TQ65A8JTMCUR-KTM FBGA

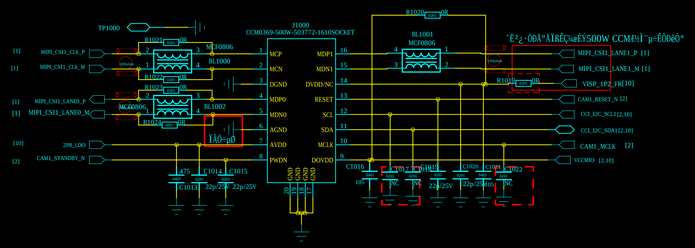
EMCP¶þ¹©£°0886361 IC MT29TZZZ8D5BKFAH-125 W.95K VFBGA

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

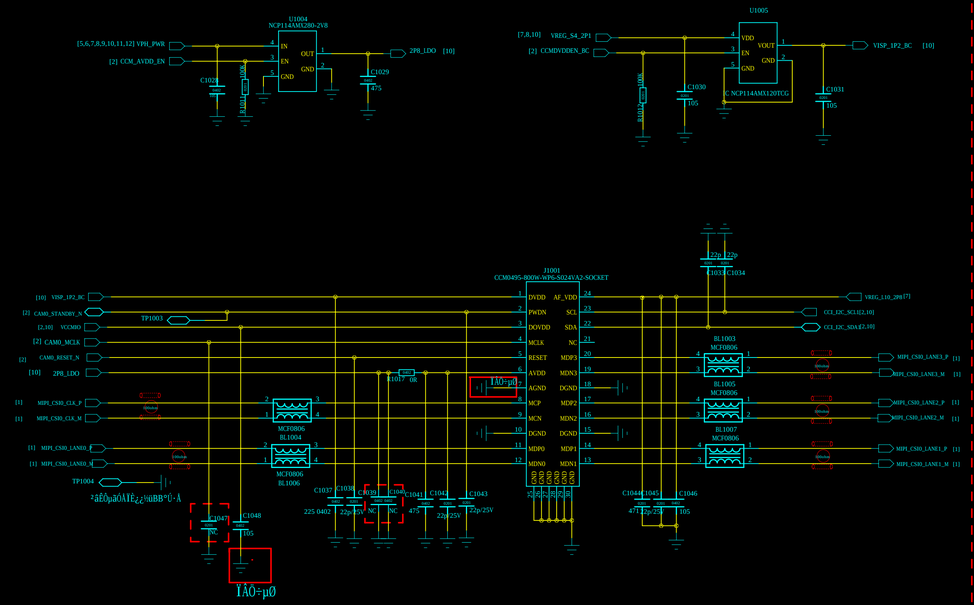
COMPANY: vivo			
TITLE: PD1510AM-A			
DRAWN:	DATED:	CODE:	SIZE:
CHECKED:	DATED:	DRAWING NO:	REV: A
QUALITY CONTROL:	DATED:		
RELEASED:	DATED:	SCALE:	SHEET: 9 OF 18

SUB CAMERA

0010000+R/W Samsung5E2

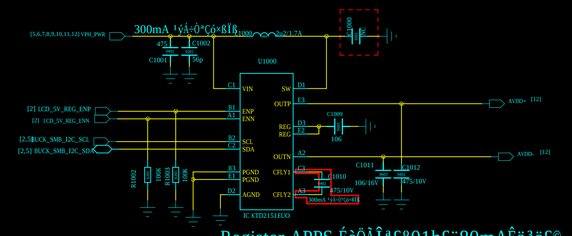


REAR CAMERA

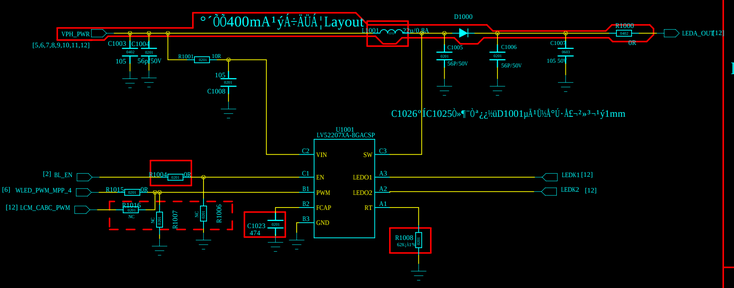


0110110 +R/W OV8858(Sensor) 0001100+R/W OV8858(driver)

LCM BIAS DRIVER

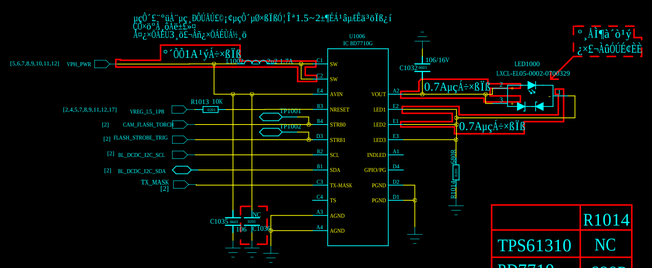


BACKLIGHT DRIVER



	R1004		R1008	C1023		L1001	Ó²¼ÞÊ¶±ð	±³¹âµ÷½Ú·½ÊÊ½
TPS61163A	4K7		62K	474		4.7U	R215£°NC	µ¥Ïßµ÷¹â
LV52207	0R		62K	474		10uH/22uH	R215£°1K	PWMµ÷¹â

FLASH LED DRVIER



	R1014
TPS61310	NC
BD7710	680R

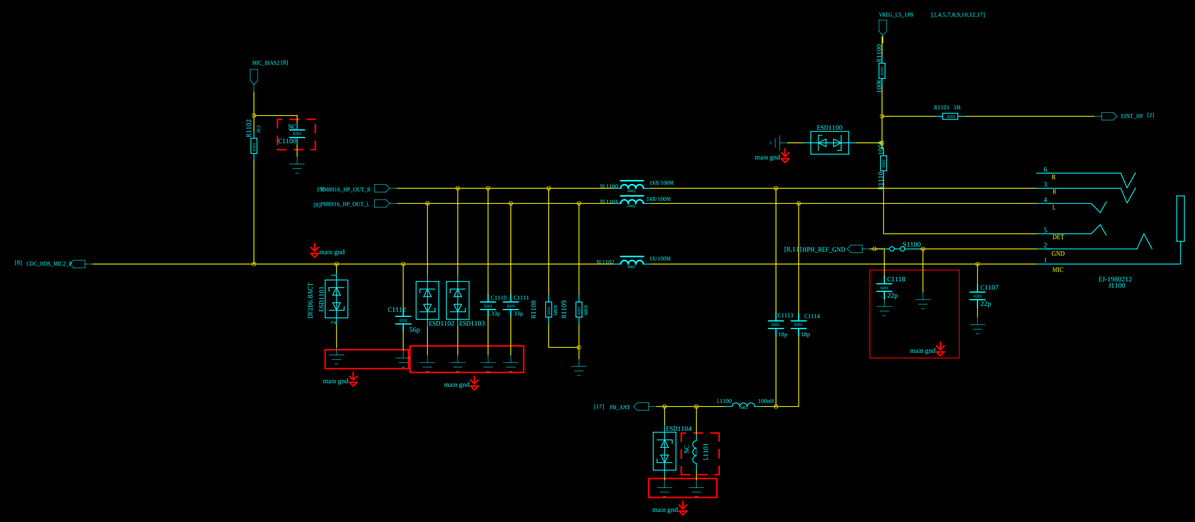
IICµØÖ·£°0110011R/W TPS61310

BOM CHANGE:BLxx->1000267

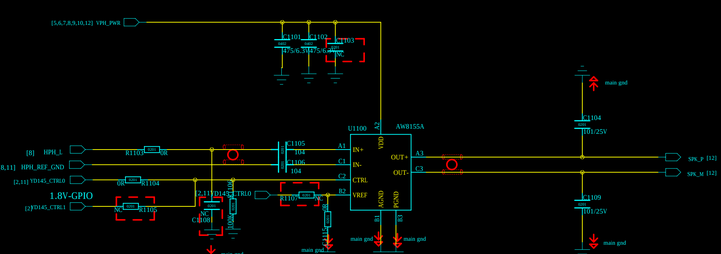
BOM CHANGE :L1004 ->600mA

COMPANY:	vivo
TITLE:	PD1510AM-A
SIZE:	D
REV:	A
SHEET 10 OF 18	

Earphone RECEIVER

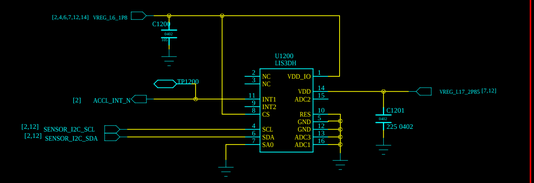


YD145



μεYDA145λèλιº°ÊxÊνÎΓ©μλÊε^°ò
ª¡¹·λÊà°ò¡¹λ¥º°ÊμλÕâΘΘCE¹¹¹¹Þÿÿÿ

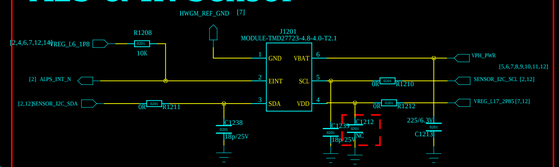
G SENSOR



	R1200	I2C地址
LIS3DSH	0R	0011110+R/W
LIS3DH	NC	0011000+R/W

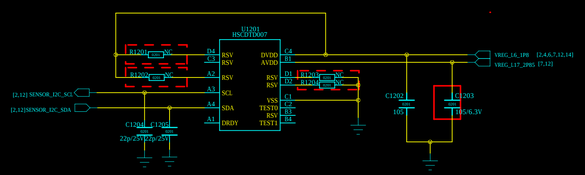
Note:①ACCL_INT接AP的任意GPIO口

ALS & IR Sensor



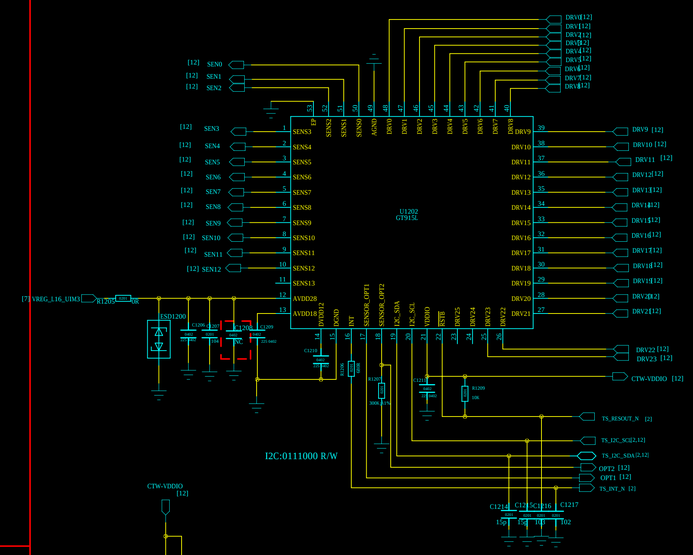
IICµØÕ·£°0111001

M-Sensor



	R1201	R1202	R1203	R1204	C1203	I2C地址
AK8963C	0R	0R	0R	0R	105	000 1100+R/W
YAS533	0R	NC	NC	0R	105	010 1110+R/W
HSCDTD007	NC	NC	NC	NC	105	000 1100+R/W
MMC35160PJ	NC	NC	NC	NC	475	011 0000+R/W

CTW



	OPT1 FPC×´Î¬	OPT2 FPC×´Î¬
ÐÀÀû	GND	GND
ÕµÙÊ	GND	NC

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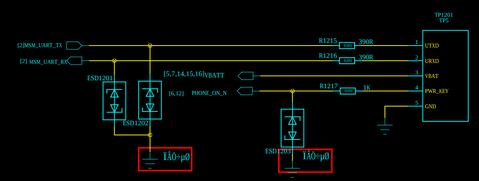
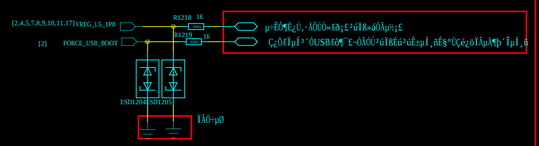
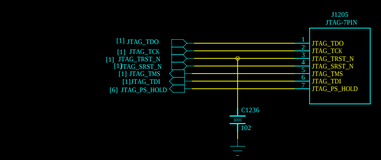


Ç¿ÖÆÏÂÂÔØ¿ÚÊº1.3mm



JTAG connector---Í³Ò»³É±ê×¼²âÊÔµã



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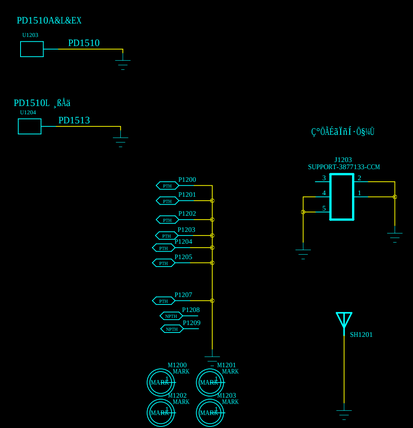
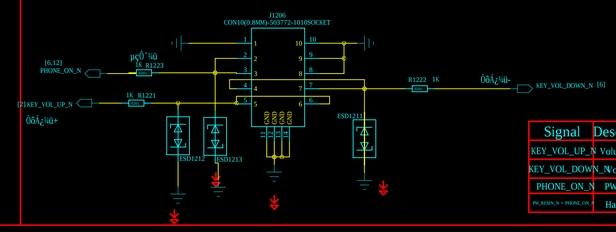


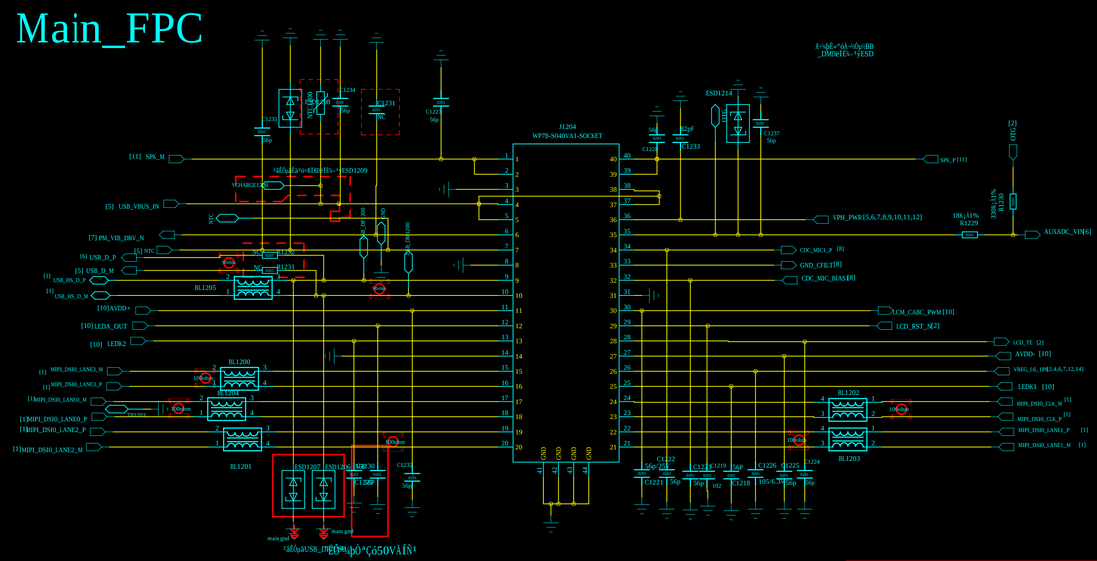
MARKµã

Connector_Key_FPC



Signal	Description
KEY_VOL_UP_N	Volume Up
KEY_VOL_DOWN_N	Volume Down
PHONE_ON_N	PWER_ON
PM_RESIN_N + PHONE_ON_N	Hardware Reset

Main_FPC



COMPANY:	vivo
TITLE:	PD1510AM-A
CODE:	
SIZE:	D
DRAWING NO.:	
REV:	A
SCALE:	
SHEET: 12 OF 18	

WTR4905ËùÓÐÉäÆµ¶Ë¿Ú¶¼ÐèÒª¸ôÖ±

同band的主辅接收走线链路不能平行过长，校准时互相干扰

CLK立体包地处理

MIPI_RFFE线上总电容不要超过50pF

GNSS射频输入端需预留匹配网络构成notch filter并靠近WTR4905放置

U1300 has at least 35dB attenuation for the frequency range 4950-6000MHZ

IQ单端走线负载电容不要超过12pF

VDD_WTR_1P0给本振供电，走线注意与其他敏感走线隔开并加强地保护，需要走星型走线

B7 PRX

B38/41 PRX

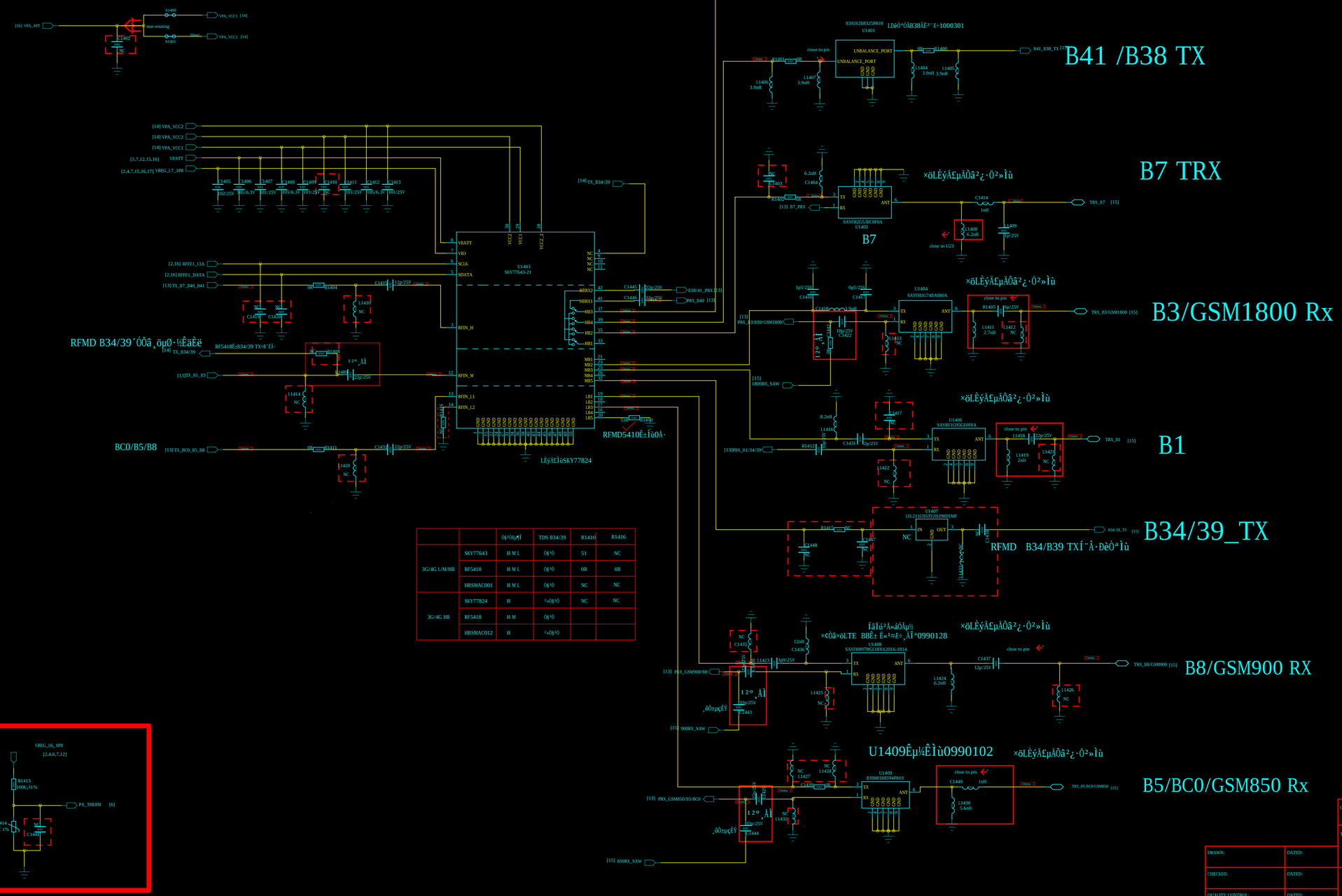
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

COMPANY:	vivo		
TITLE:	PD1510AM-A		
CODE:	SIZE: D	DRAWING NO:	REV: A
SCALE:		SHEET: 18 OF 18	

DRAWN:		DATED:	
CHECKED:		DATED:	
QUALITY CONTROL:		DATED:	
RELEASED:		DATED:	

GSM	WCDMA	CDMA	TDD_LTE	FDD_LTE	TD_SCDMA
850/900/1800/1900	B1/B2/B5/B8	BC0	B38/B39/B40/B41	B1/B3/B5/B7/B8	B34/B39

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

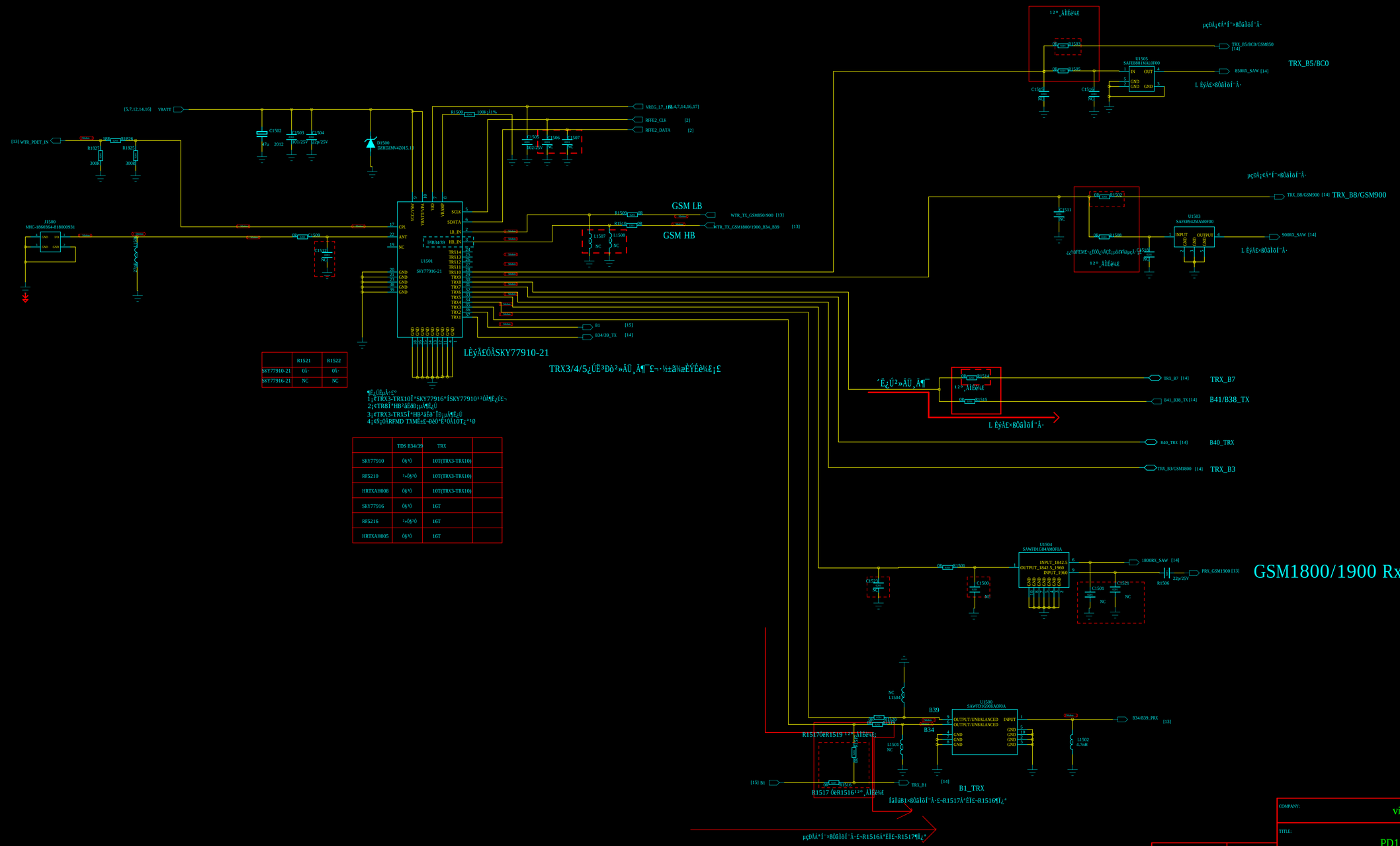


		ôß½ôÍ¬Ì	TDS B34/39	R1410	R1416
3G/4G L/M/HB	SKY77643	H M L	ôß½ô	51	NC
	RF5410	H M L	ôß½ô	0R	0R
	HRSMAC001	H M L	ôß½ô	NC	NC
3G/4G HB	SKY77824	H	²¤Ôß½ô	NC	NC
	RF5418	H M	ôß½ô		
	HRSMAC012	H	²¤Ôß½ô		

COMPANY:	vivo
TITLE:	PD1510AM-A
DRAWN:	DATED:
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:
CODE:	SIZE: D
DRAWING NO:	REV: A
SCALE:	SHEET: 18

B7/B40/B41 TX

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



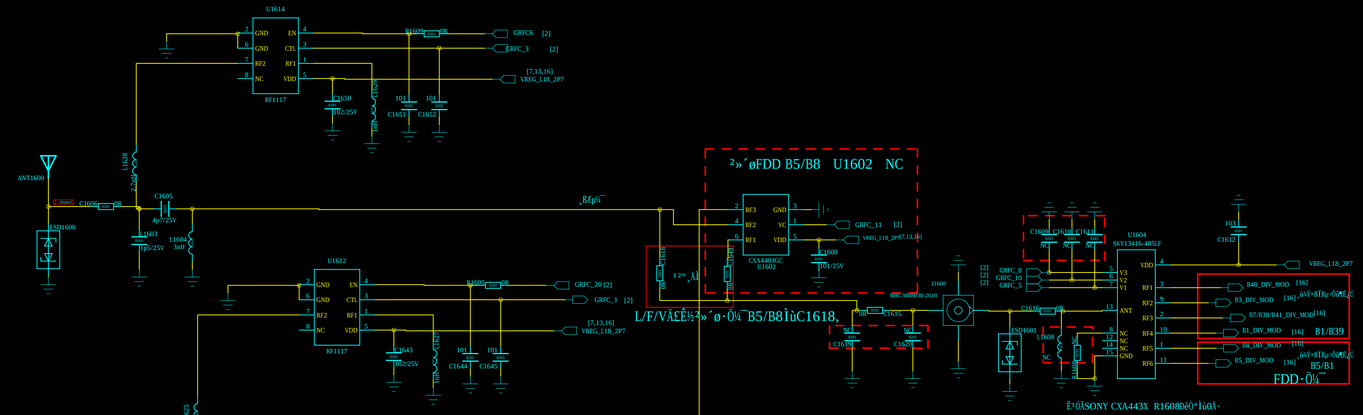
	R1521	R1522
SKY77910-21	0Ã·	0Ã·
SKY77916-21	NC	NC

¶È¿ÚÈµÌ·£º
1¡¢TRX3-TRX10Î²SKY77916°ÍSKY77910²²Ò¼¶È¿ÚÈ~
2¡¢TR8Î³HB²ãÈàÐµµÌ¶È¿Ú
3¡¢TRX3-TRX5Î²HB²ãÈà´ÍÐµµÌ¶È¿Ú
4¡¢¶¡ÓÀRFMD TXMÉ±È~ÐèÒ´È³ÓÀ1ÓT¿²³Ù

	TDS B34/39	TRX	
SKY77910	ôß³Ò	10T(TRX3-TRX10)	
RF5210	²»ôß³Ò	10T(TRX3-TRX10)	
HRTXAH008	ôß³Ò	10T(TRX3-TRX10)	
SKY77916	ôß³Ò	16T	
RF5216	²»ôß³Ò	16T	
HRTXAH005	ôß³Ò	16T	

DRAWN: LDX	DATED:	COMPANY: vivo	
CHECKED:	DATED:	TITLE: PD1510AM-A	
QUALITY CONTROL:	DATED:	CODE:	SIZE: D / DRAWING NO: / REV:
RELEASED:	DATED:	SCALE:	SHEET: OF

DRX ANTENNA



B3

B5

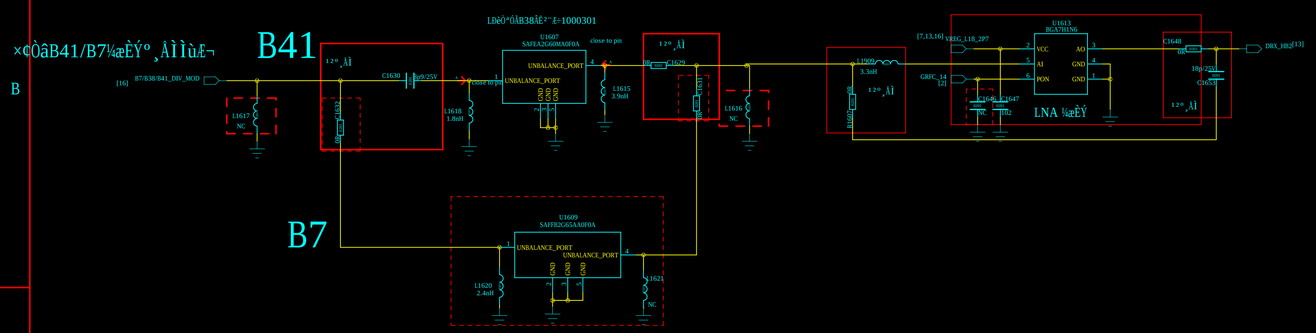
B1

B39

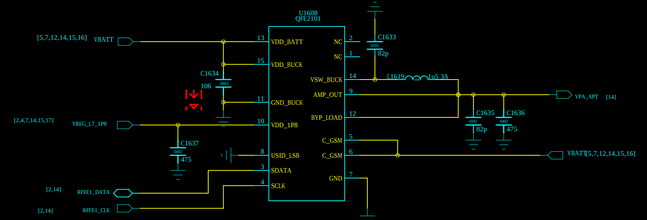
B8

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

B41/40/7 _DRX



APT



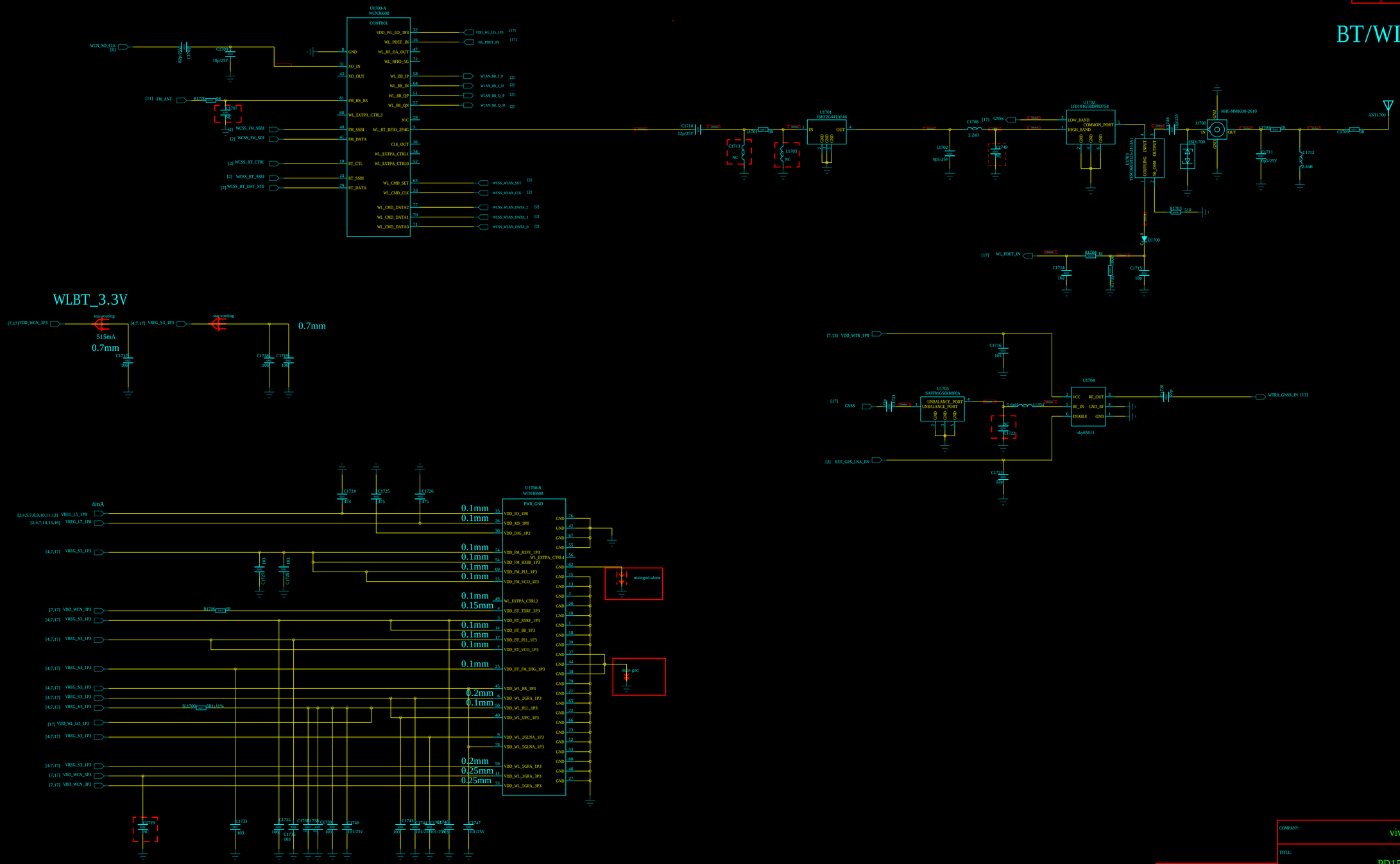
QFE2101 MIPI ID=0x04 only

COMPANY:	vivo		
TITLE:	PD1510AM-A		
CODE:	SIZE: D	DRAWING NO:	REV: A
SCALE:		SHEET: 16 18	

DRAWN:	DATED:
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:

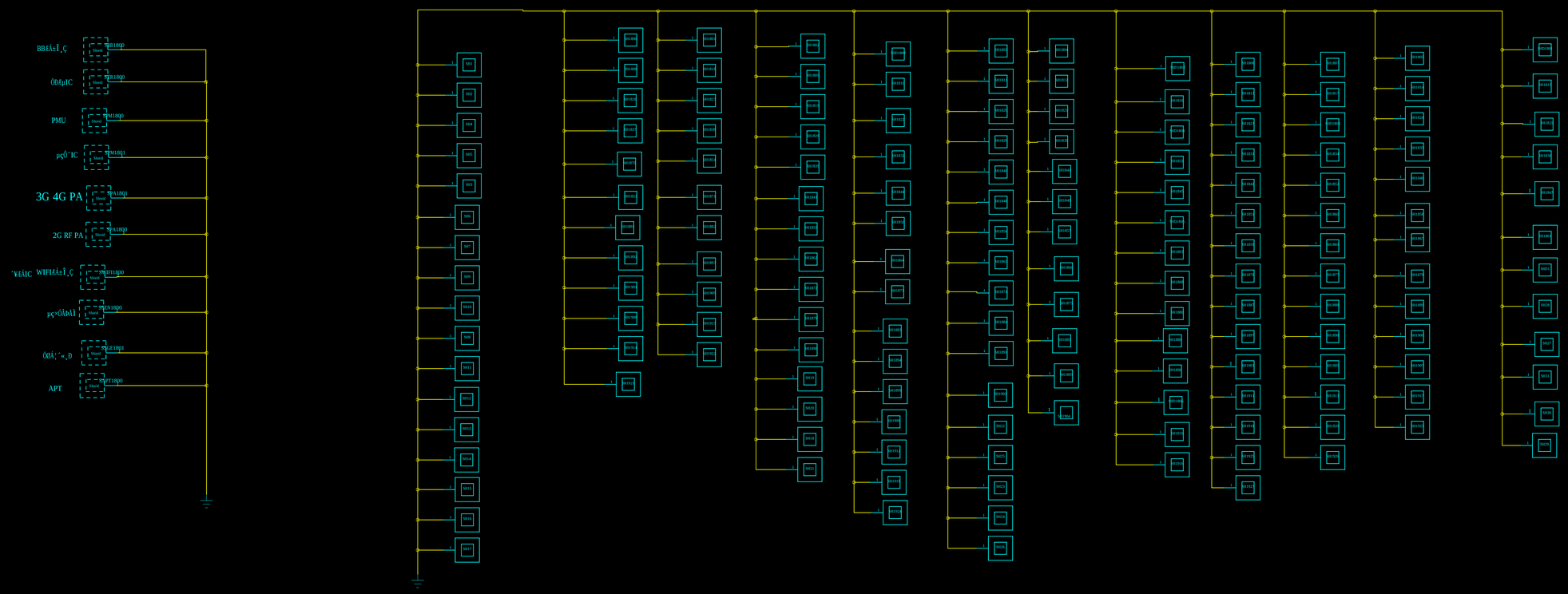
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

BT/WIFI/GPS



DRAWN:	DATED:	COMPANY: vivo	
CHECKED:	DATED:	TITLE: PD1510AM-A	
QUALITY CONTROL:	DATED:	CODE: / SIZE: D / DRAWING NO:	REV: A
RELEASED:	DATED:	SCALE:	SHEET: 17 18

SHIEDLING



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DRAWN:	DATED:	COMPANY: vivo	
CHECKED:	DATED:	TITLE: PD1510AM-A	
QUALITY CONTROL:	DATED:	CODE:	SIZE: D / DRAWING NO: / REV: A
RELEASED:	DATED:	SCALE:	SHEET: 18