U1A — STM32F429ZGT6

Signal	Pin		Port	Pin	Signal
TX_DE	34	PA0-WKUP(PA0)	PB0	46	LTDC_R3
RX_DE	35	PA1	PB1	47	LTDC_R6
BUZZER	36	PA2	PB2-BOOT1(PB2)	48	
LTDC_B5	37	PA3	PB3(JTDO/TRACESWO)	133	
LTDC_VSYNC	40	PA4	PB4(NJTRST)	134	
	41	PA5	PB5	135	FMC_SDCKE1
LTDC_G2	42	PA6	PB6	136	FMC_SDNE1
	43	PA7	PB7	137	
CPT_SCL	100	PA8	PB8	139	LTDC_B6
@TxD	101	PA9	PB9	140	LTDC_B7
@RxD	102	PA10	PB10	69	LTDC_G4
LTDC_R4	103	PA11	PB11	70	LTDC_G5
LTDC_R5	104	PA12	PB12	73	DFLASH_RST
SWDIO	105	PA13(JTMS-SWDIO)	PB13	74	SPI2_SCK
SWCLK	109	PA14(JTCK-SWCLK)	PB14	75	
@RECEIVE_FLAG	110	PA15(JTDI)	PB15	76	
FMC_SDNWE	26	PC0	PD0	114	FMC_D2
DFLASH_CS	27	PC1	PD1	115	FMC_D3
SPI2_MISO	28	PC2	PD2	116	SDIO_CMD
SPI2_MOSI	29	PC3	PD3	117	LTDC_G7
	44	PC4	PD4	118	TOUCH_CS
	45	PC5	PD5	119	LCD_PWM
LTDC_HSYNC	96	PC6	PD6	122	
LTDC_G6	97	PC7	PD7	123	TOUCH_INT
SDIO_D0	98	PC8	PD8	77	FMC_D13
CPT_SDA	99	PC9	PD9	78	FMC_D14
CPT_RST	111	PC10	PD10	79	FMC_D15
CPT_INT	112	PC11	PD11	80	
SDIO_CK	113	PC12	PD12	81	
@SEND_FLAG	7	PC13	PD13	82	
@RE	8	PC14-OSC32_IN(PC14)	PD14	85	FMC_D0
@DE	9	PC15-OSC32_OUT(PC15)	PD15	86	FMC_D1

STM32F429ZGT6

U1B — STM32F429ZGT6

Signal	Pin	Port	Port	Pin	Signal
FMC_NBL0	141	PE0	PF0	10	FMC_A0
FMC_NBL1	142	PE1	PF1	11	FMC_A1
LED_T_1	1	PE2	PF2	12	FMC_A2
LED_T_2	2	PE3	PF3	13	FMC_A3
LED_T_3	3	PE4	PF4	14	FMC_A4
	4	PE5	PF5	15	FMC_A5
	5	PE6	PF6	18	
FMC_D4	58	PE7	PF7	19	SPI5_CSK
FMC_D5	59	PE8	PF8	20	SPI5_MISO
FMC_D6	60	PE9	PF9	21	SPI5_MOSI
FMC_D7	63	PE10	PF10	22	LTDC_DE
FMC_D8	64	PE11	PF11	49	FMC_SDNRAS
FMC_D9	65	PE12	PF12	50	FMC_A6
FMC_D10	66	PE13	PF13	53	FMC_A7
FMC_D11	67	PE14	PF14	54	FMC_A8
FMC_D12	68	PE15	PF15	55	FMC_A9
FMC_A10	56	PG0	PH0-OSC_IN(PH0)	23	
FMC_A11	57	PG1	PH1-OSC_OUT(PH1)	24	
FMC_A12	87	PG2			
	88	PG3	BOOT0	138	
FMC_BA0	89	PG4			
FMC_BA1	90	PG5	NRST	25	
LTDC_R7	91	PG6			
LTDC_CLK	92	PG7	PDR_ON	143	
FMC_SDCLK	93	PG8	VCAP_1	71	
	124	PG9	VCAP_2	106	
LTDC_G3	125	PG10			
LTDC_B3	126	PG11			
LTDC_B4	127	PG12			
	128	PG13			
	129	PG14			
FMC_SDNCAS	132	PG15			

STM32F429ZGT6

X1 8MHZ
C1 18PF
C2 18PF
GND

R1 2.2K GND
R2 2.2K +3.3V
GND

C3 2.2UF GND
C4 2.2UF GND

U1C — STM32F429ZGT6

+VREF				
6	VBAT	VREF+	32	+VREF
17	VDD			
30	VDD			
39	VDD	VSS	16	
52	VDD	VSS	38	
62	VDD	VSS	51	
72	VDD	VSS	61	
84	VDD	VSS	83	
95	VDD	VSS	94	
108	VDD	VSS	107	
121	VDD	VSS	120	
131	VDD	VSS	130	
144	VDD			
33	VDDA	VSSA	31	VSSA

+3.3V
C10 1000UF-10V
GND

R3 100R GND

VDDA

STM32F429ZGT6

+3.3V L1 10UH
VDDA L2 10UH
+VREF
C5 100N
C6 1UF
C7 18PF
C8 1UF
C9 100N
L3 10UH
GND
VSSA

+3.3V
C11 100N | C12 100N | C13 100N | C14 100N
GND

+3.3V
C21 100N | C22 100N | C45 100N | C46 100N
GND

J1 PROG
1 SWDIO
2
3 SWCLK
GND

J2 DEBUG
1 RX_DE
2
3 TX_DE
GND

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U2

MT48LC16M16A2P-75

Pin	Signal		Signal	Pin
1	VDD	GND	54	
2	DQ0	DQ15	53	FMC_D0 / FMC_D15
3	VDDQ	GNDQ	52	
4	DQ1	DQ14	51	FMC_D1 / FMC_D14
5	DQ2	DQ13	50	FMC_D2 / FMC_D13
6	GNDQ	VDDQ	49	
7	DQ3	DQ12	48	FMC_D3 / FMC_D12
8	DQ4	DQ11	47	FMC_D4 / FMC_D11
9	VDDQ	GNDQ	46	
10	DQ5	DQ10	45	FMC_D5 / FMC_D10
11	DQ6	DQ9	44	FMC_D6 / FMC_D9
12	GNDQ	VDDQ	43	
13	DQ7	DQ8	42	FMC_D7 / FMC_D8
14	VDD	GND	41	
15	LDQM	NC	40	FMC_NBL0
16	WE_	UDQM	39	FMC_SDNWE / FMC_NBL1
17	CAS_	CLK	38	FMC_SDNCAS / FMC_SDCLK
18	RAS_	CKE	37	FMC_SDNRAS / FMC_SDCKE1
19	CS_	NC	36	FMC_SDNE1 / FMC_A12
20	BA0	A11	35	FMC_BA0 / FMC_A11
21	BA1	A9	34	FMC_BA1 / FMC_A9
22	A10	A8	33	FMC_A10 / FMC_A8
23	A0	A7	32	FMC_A0 / FMC_A7
24	A1	A6	31	FMC_A1 / FMC_A6
25	A2	A5	30	FMC_A2 / FMC_A5
26	A3	A4	29	FMC_A3 / FMC_A4
27	VDD	GND	28	

+3.3V

C15 100N C16 100N C17 100N C18 100N

GND

+3.3V

C19 100N C20 10UF

GND

U4 — ADM2587

Pin	Left	Right	Pin
1	GND-1	GND-2	20
2	VCC	Visoin	19
3	GND-1	A	18
4	RxD	B	17
5	RE	GND-2	16
6	DE	Z	15
7	TxD	GND-2	14
8	VCC	Y	13
9	GND-1	Visoout	12
10	GND-1	GND-2	11

@RxD
@RE
@DE
@TxD

@SEND_FLAG
@RECEIVE_FLAG

R4 1K
R5 1K
D1 LED
D2 LED

C23 10UF
C24 100N
C25 10N

C30 1000UF-10V
C31 10UF
C32 100N

C26 10N
C27 100N
C28 100N
C29 10UF

R6 4.7K
R7 4.7K
R8 100R
U3 EL817

R9 DNI
R10 4.7R
R11 4.7R
R12 120R
R13 DNI
R14 10K
U5 SM712

L4 FERRIT-600R

R16 4.7K
R15 4.7K
R17 1K
U6 EL817

J3 RG45 / RJ-45

+5V
+12V
+3.3V
GND
NET_GND

+3.3V

R18 R19 R20 R21 R22
47K 47K 47K 47K 47K

+3.3V

GND

SDIO_D1
SDIO_D0
SDIO_CK
SDIO_CMD
SDIO_D3
SDIO_D2

1 2 3 4 5 6 7 8

D2
CS/D3
DI/CMD
VDD
SCLK/CLK
VSS
DO/D0
D1

J4
TFP-09-2-12B

SW1 SW2
9   10

U7

SPI2_MOSI	1	SI	SO	8	SPI2_MISO
SPI2_SCK	2	SCK	GND	7	GND
DFLASH_RST	3	RST	VCC	6	
DFLASH_CS	4	CS	WP	5	

AT45DB161E-SSHD

+3.3V

C33
100N

+5V X2

BUZZER

R26
1K

Q1
BC337

BUZZER

R27
10K

GND

GND

2

1

3

GND

Power supply schematic — POWER.SchDoc

U10 78M05
- +7V → 1 Vin, GND, Vo 3 → +5V
- 10UF C39
- GND

U11 LM1117-3.3
- +7V → 3 Vin, ADJ/GND, Vout 2 → +3.3V
- C41 100N
- 10UF C42
- GND

LED_T_1 — R53 100R — D17 LED — GND
LED_T_2 — R54 100R — D18 LED — GND
LED_T_3 — R55 100R — D19 LED — GND

+3.3V — R50 100R — D14 LED — GND
+5V — R51 330R — D15 LED — GND
+12V-IN — R52 1K — D16 LED — GND

U15 LM2576-ADJ
- +12V — D5 SB260 — +12V-IN — 1 Vin
- C40 1000UF-25V — GND
- GND, ON/OFF, F.B 4, OUT 2
- GND GND
- L10 220UH
- D13 1N5822 — GND
- R48 1K — GND
- R49 4.7K — +7V
- C71 1000UF-16V — GND
- C72 1000UF-16V — GND

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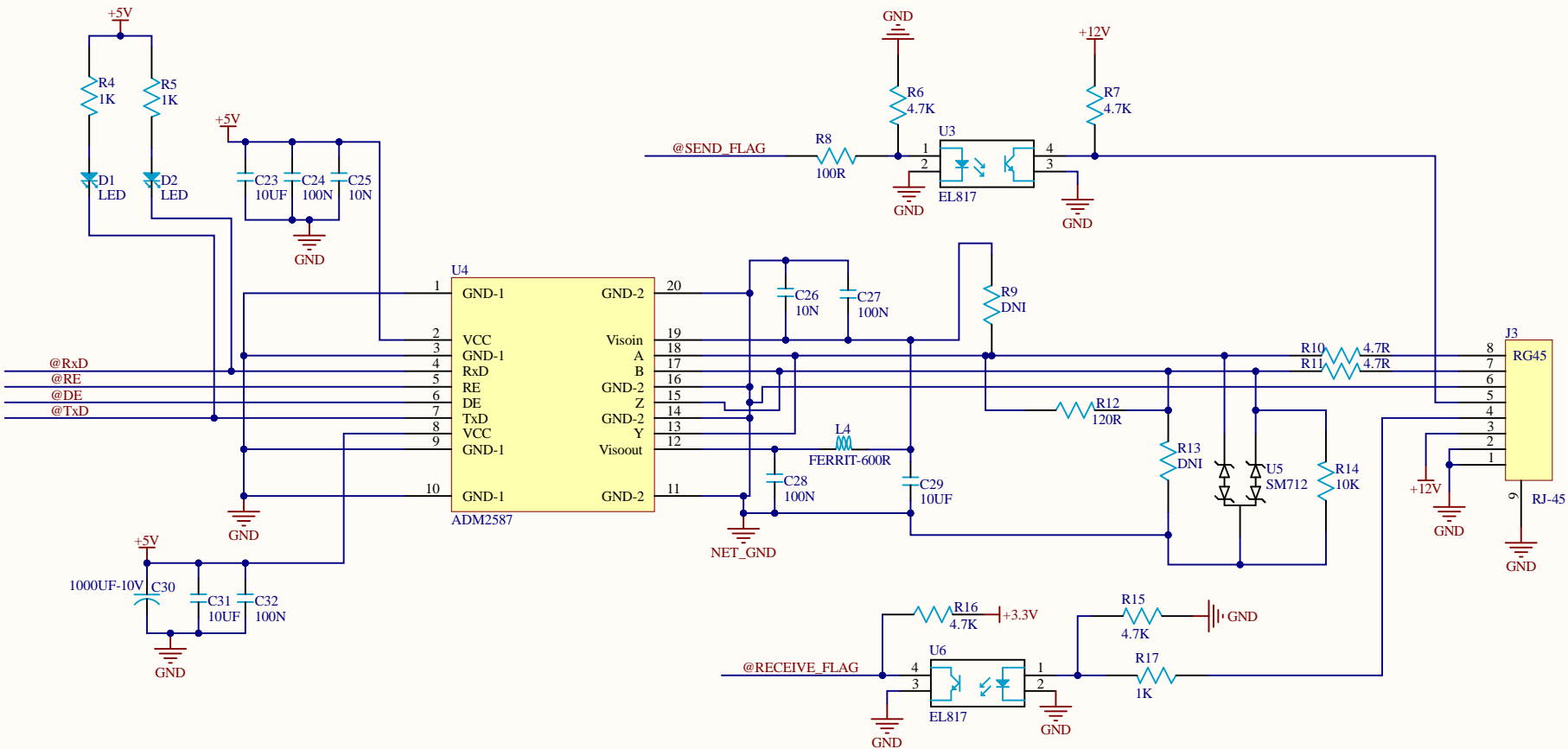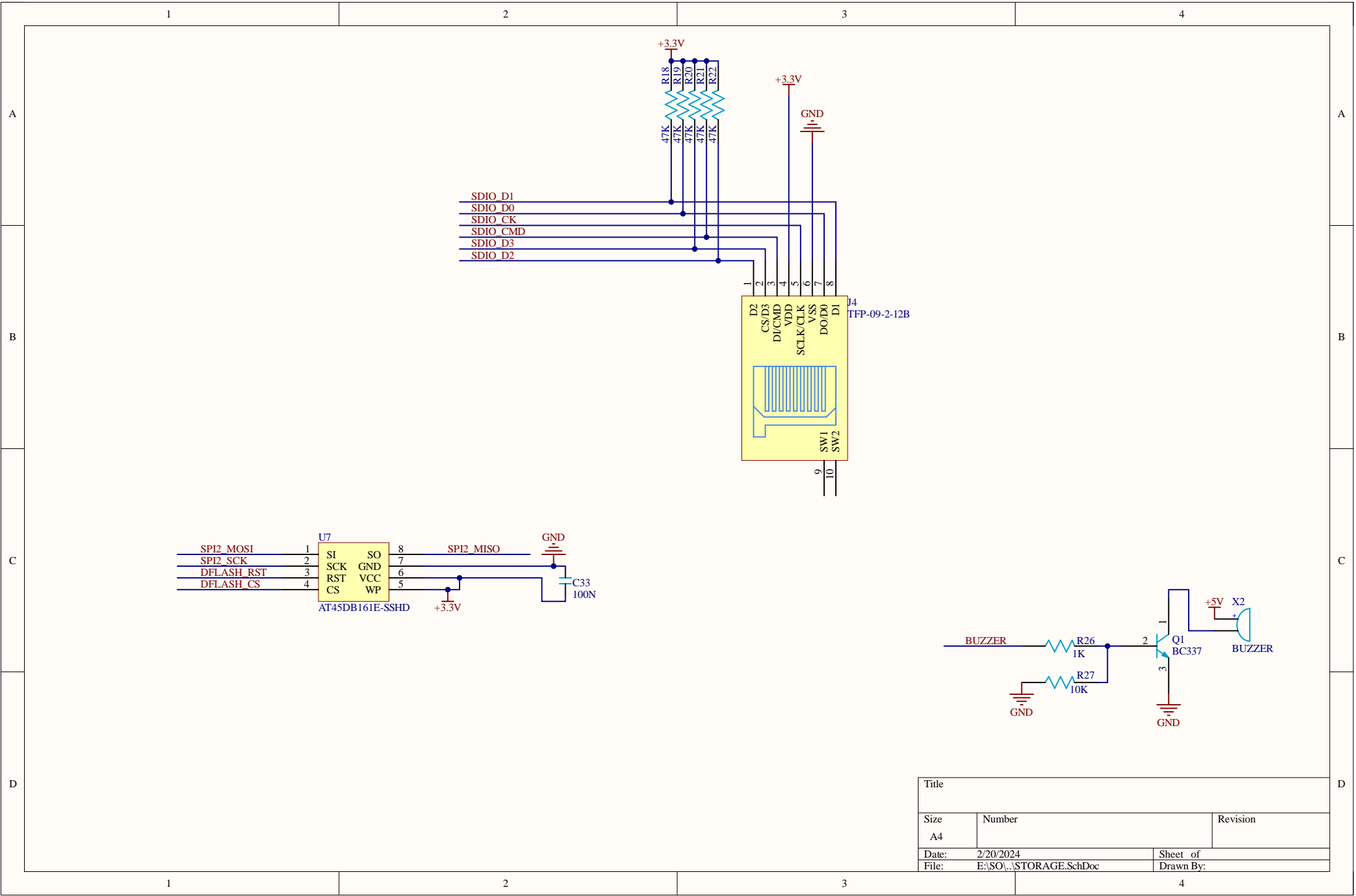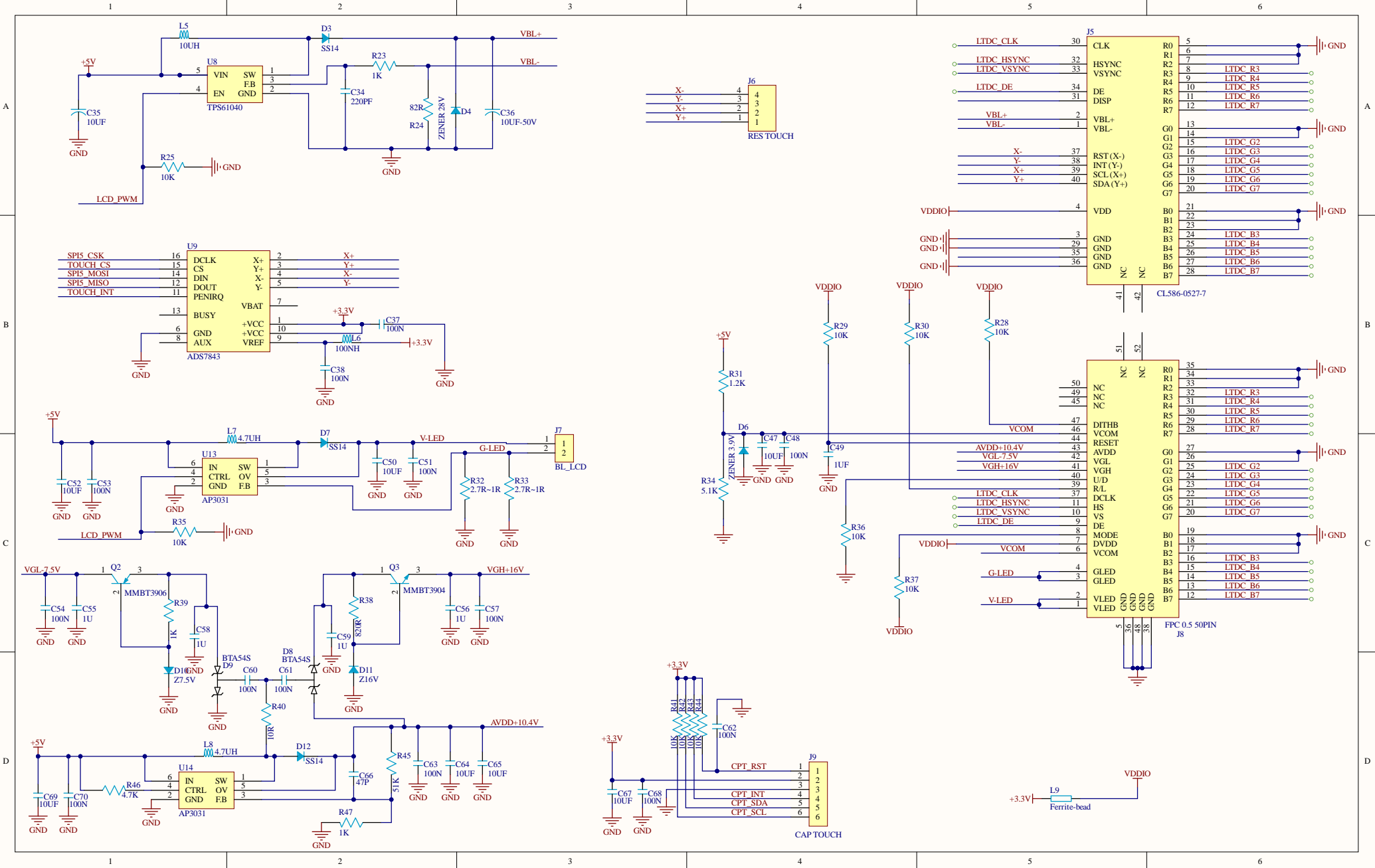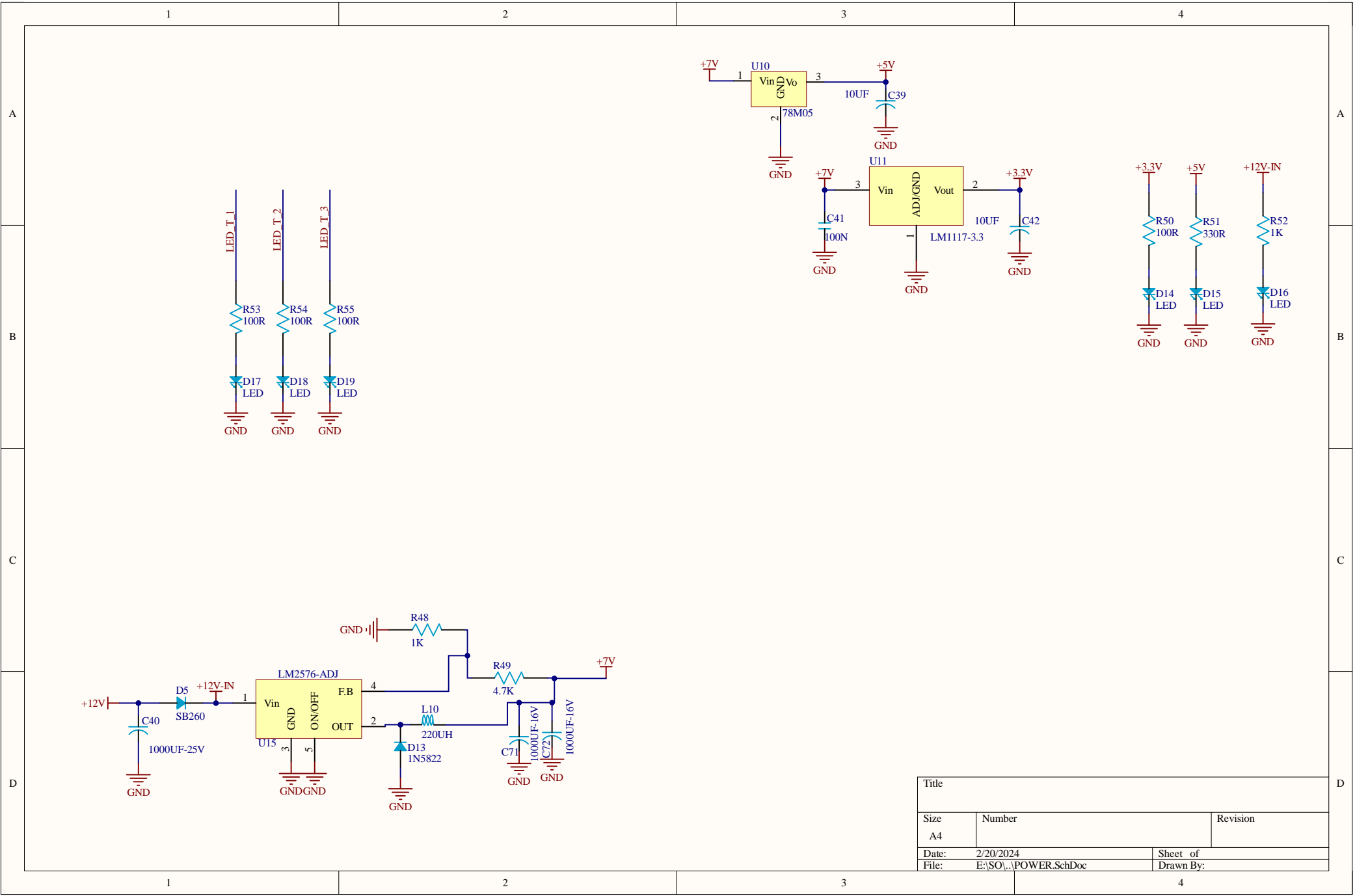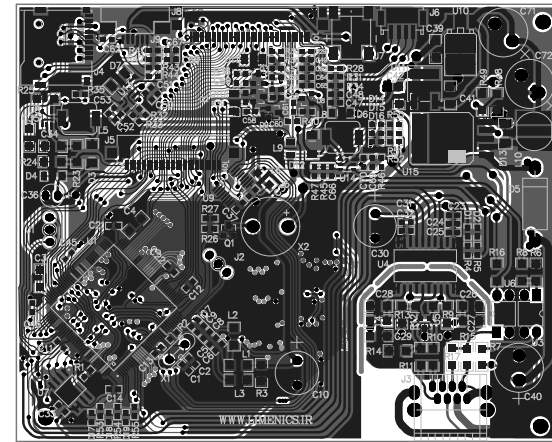
Comment	Description	Designator	Footprint	LibRef	Quantity
18PF		C1, C2, C7	0603	CAP	3
2.2UF		C3, C4	1206	CAP	2
100N		C5, C9, C11, C12, C13, C14, C15, C16, C17, C18, C19, C21, C22, C24, C32, C33, C37, C38, C45, C46, C48, C51, C53, C54, C57, C60, C61, C62, C63, C68, C70	0603	CAP	31
1UF		C6, C8, C49	0603	CAP	3
1000UF-10V		C10, C30	RB.2/.4	CAP_POL	2
10UF		C20, C23, C31, C47, C50, C52, C64, C65, C67, C69	0603	CAP	10
10N		C25	0603	CAP	1
10N		C26	1206	CAP	1
100N		C27, C28, C41	1206	CAP	3
10UF		C29, C35, C39, C42	1206	CAP, CAP_POL	4
220PF		C34	1206	CAP	1
10UF-50V		C36	RB.1/.3	CAP_POL	1
1000UF-25V		C40	RB.2/.4	CAP_POL	1
1U		C55, C56, C58, C59	0603	CAP	4
47P		C66	0603	CAP	1
1000UF-16V		C71, C72	RB.2/.4	CAP_POL	2
LED		D1, D2, D14, D15, D16, D17, D18, D19	0603	LED	8
SS14		D3, D7, D12	SOD-123-B	DIODE	3
ZENER 28V		D4	SOD-123	DIODE	1
SB260		D5	DIODE0.1	DIODE	1
ZENER 3.9V		D6	SOD-123	DIODE	1
BTA54S		D8, D9	SOT-23	BTA54S	2
Z7.5V		D10	MINI-MELF	DIODE	1
Z16V		D11	MINI-MELF	DIODE	1
1N5822		D13	SOD-123-B	DIODE	1
PROG		J1	SIP3	SIP3	1
DEBUG		J2	SIP3	SIP3	1
RJ-45		J3	RJ-45	RJ-45	1
TFP-09-2-12B		J4	TFP-09-2-12B	uSD	1
CL586-0527-7		J5	PFC-40	FPC 0.5 40PIN	1
RES TOUCH		J6	4PIN-1.5MM-SMD	4-PIN	1
BL_LCD		J7	BL_LCD	BL_LCD	1
FPC 0.5 50PIN		J8	PFC-50	FPC 0.5 50PIN	1
CAP TOUCH	FPC-6-TOP-1MM	J9	FPC-6-TOP-1MM	FPC-6-TOP-1MM	1
10UH		L1, L2, L3	1206	SELF	3
FERRIT-600R		L4	1206	SELF	1
10UH		L5	SELF_7MM	SELF	1
100NH		L6	1206	SELF	1
4.7UH		L7, L8	SELF_7MM	SELF	2
Ferrite-bead		L9	0805	Ferrite-bead	1
220UH		L10	SELF_SMD_CD75	SELF	1
BC337		Q1	BC337	NPN-SMD	1
MMBT3906		Q2	BC337	PNP-SMD	1
MMBT3904		Q3	BC337	NPN-SMD	1
2.2K		R1, R2	0603	RES	2
100R		R3, R8	1206	RES	2
1K	[NoValue], RES	R4, R5, R26, R39, R47, R52	0603	RES	6
4.7K		R6, R7, R15, R16, R49	1206	RES	5
DNI		R9, R13	1206	RES	2
4.7R		R10, R11	1206	RES	2
120R		R12	1206	RES	1
10K	[NoValue], RES	R14, R25	1206	RES	2
1K	[NoValue], RES	R17, R23, R48	1206	RES	3
47K	RES	R18, R19, R20, R21, R22	0603	RES	5
82R	RES	R24	1206	RES	1
10K	[NoValue], RES	R27, R28, R29, R30, R35, R36, R37, R41, R42, R43, R44	0603	RES	11
1.2K	RES	R31	0603	RES	1
2.7R~1R	RES	R32, R33	0603	RES	2
5.1K	RES	R34	0603	RES	1
820R	RES	R38	0603	RES	1
10R	RES	R40	0603	RES	1
51K	RES	R45	0603	RES	1
4.7K	RES	R46	0603	RES	1
100R		R50, R53, R54, R55	0603	RES	4
330R		R51	0603	RES	1
STM32F429ZGT6	ARM Cortex-M4 32-bit MCU+FPU, 225 DMIPS, 1024 kB Flash, 256 kB Internal RAM, 114 I/Os, 144-pin LQFP, -40 to 85 degC, Tray	U1	STM-LQFP144_N	STM32F429ZGT6	1
MT48LC16M16A2P-75		U2	TSOP-54	MT48LC16M16A2P-75	1
EL817		U3, U6	DIP4	TLP521	2
ADM2587		U4	SOIC20_W	AMD2582	1
SM712		U5	SOT-23	SM712	1
AT45DB161E-SSHD		U7	8S2	AT45DB161E-SSHD	1
TPS61040		U8	SOT23-5	TPS61040	1
ADS7843		U9	TSSOP-16	ADS7843	1
78M05		U10	DPAK	REG	1
LM1117-3.3		U11	TO-252	LM1117	1
AP3031		U13, U14	SOT23-6	AP3031	2
LM2576-ADJ		U15	CASE936A	LM2576	1
8MHZ		X1	XTAL_1	XTAL	1
BUZZER		X2	BUZZER	BUZZER	1