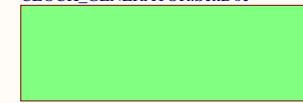


A

U_POWER
POWER.SchDoc



U_CLOCK_GENERATOR
CLOCK_GENERATOR.SchDoc



B

U_CONNECTIONS
CONNECTIONS.SchDoc



U_FPGA
FPGA.SchDoc



U_STM32
STM32.SchDoc



U_AUDIO_CODEC
AUDIO_CODEC.SchDoc



A

B

C

D

U_DAC
DAC.SchDoc



U_ADC
ADC.SchDoc



Title **MOTHERBOARD**

Size: A4	Number:2	Revision:1.9
----------	----------	--------------

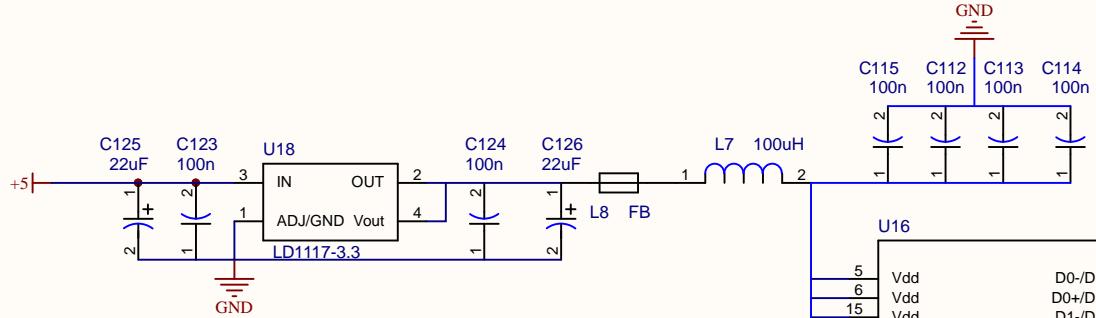
Date: 28.04.2020	Time: 10:53:51	Sheet2 of 18
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File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\MOTHERBOARD\MOTHERBOARD.SCHDOC	*	*	*	*
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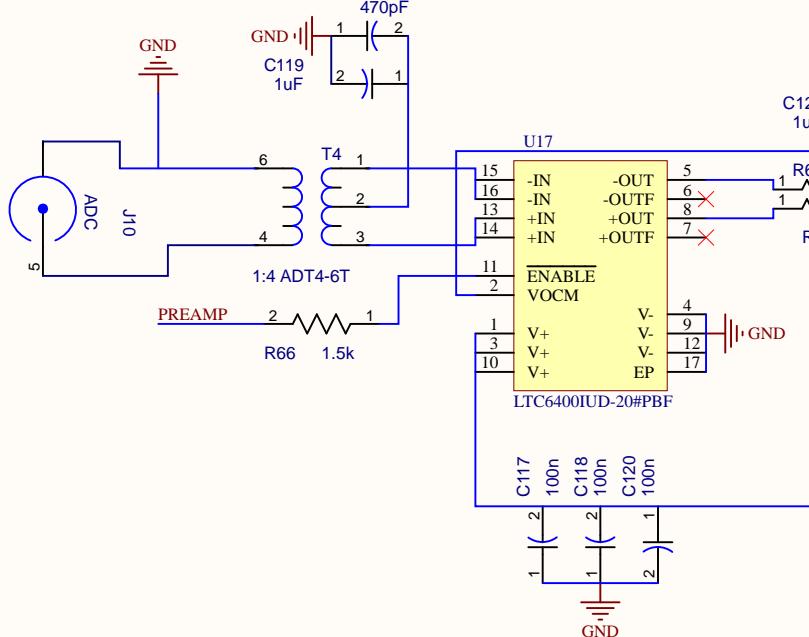
A

A



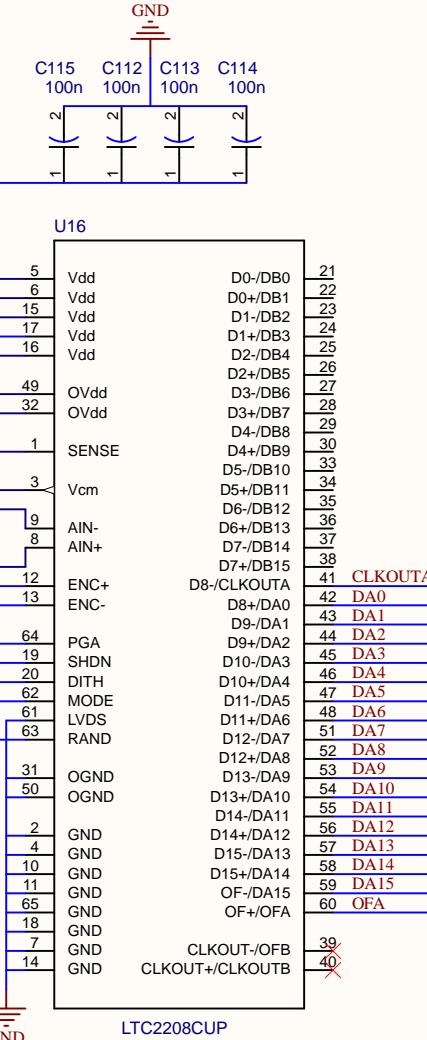
B

B



C

C



TO_FPGA

PREAMP
CLKOUTA
DA0
DA1
DA2
DA3
DA4
DA5
DA6
DA7
DA8
DA9
DA10
DA11
DA12
DA13
DA14
DA15
DITH
SHDN
OFA
RAND
PGA
CLK_122.88M
CLK_N_122.88M

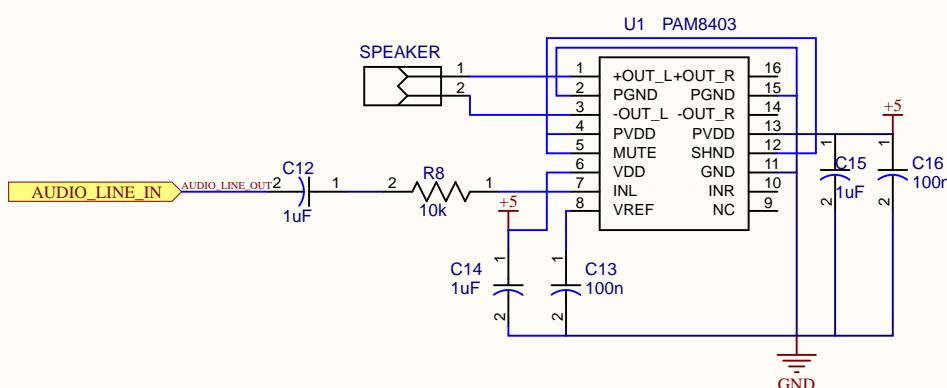
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Size: A4 Number:3 Revision:1.9

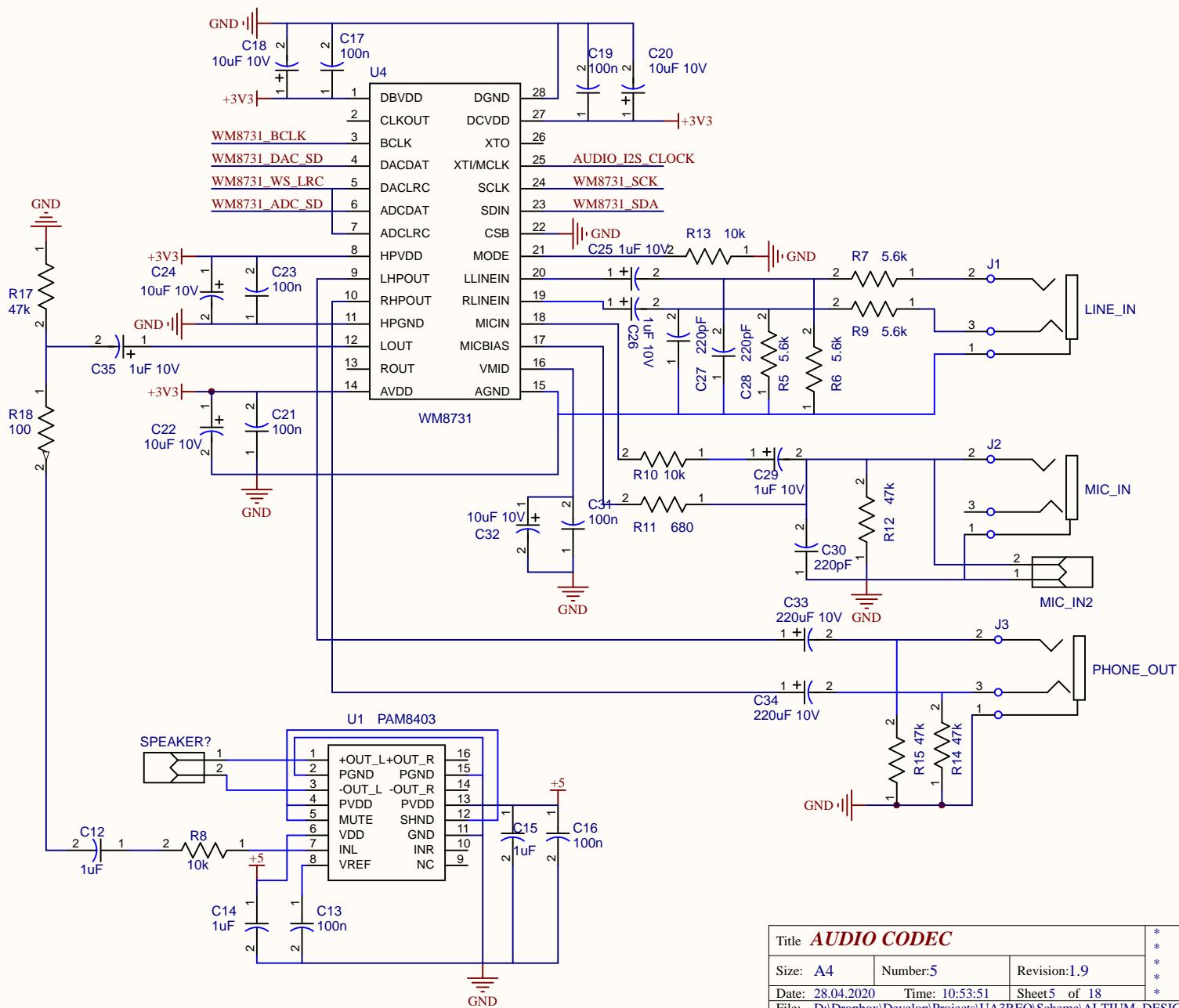
Date: 28.04.2020 Time: 10:53:51 Sheet 3 of 18

File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\MOTHERBOARD\ADC.SchDoc

Altium



Title AF AMP			* UA3REO
Size: A4	Number:4	Revision:1.9	BH8CGJ
Date: 28.04.2020	Time: 10:53:51	Sheet 4 of 18	*
File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\MOTHERBOARD\AF AMP.SchDoc			Altium

Title **AUDIO CODEC**

Size: A4 Number:5 Revision:1.9

Date: 28.04.2020 Time: 10:53:51 Sheet 5 of 18

File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\MOTHERBOARD\AUDIO CODEC.SchDoc

Altium

A

A

B

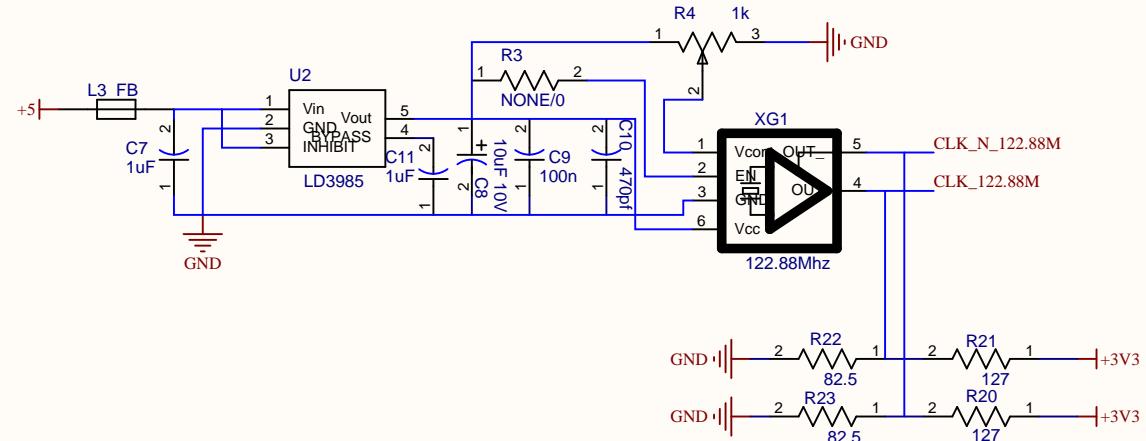
B

C

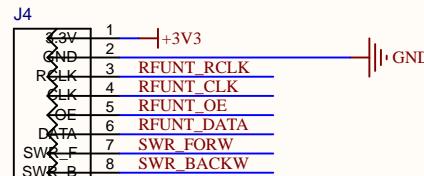
C

D

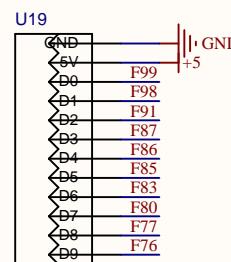
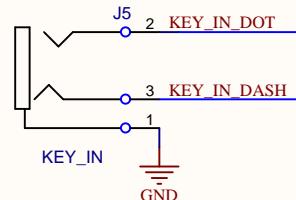
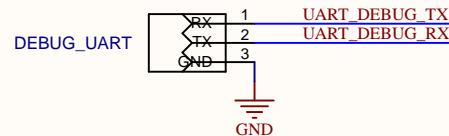
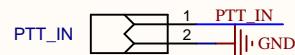
D

Title **CLOCK_GENERATOR**Size: **A4** Number:**6** Revision:**1.9**Date: **28.04.2020** Time: **10:53:51** Sheet**6** of **18**File: **D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\MOTHERBOARD\CLOCK_GENERATOR.schDoc****Altium**

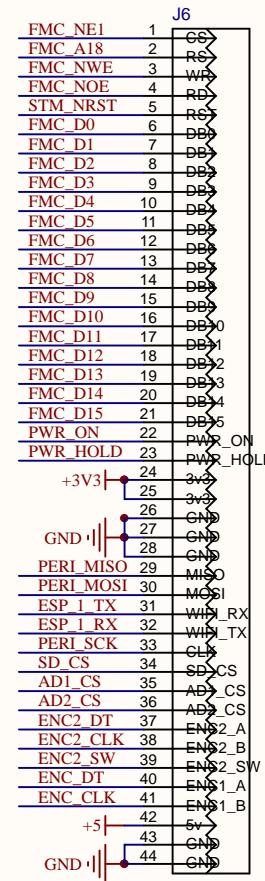
A



RF_UNIT



EXT-CONN



FRONT-UNIT

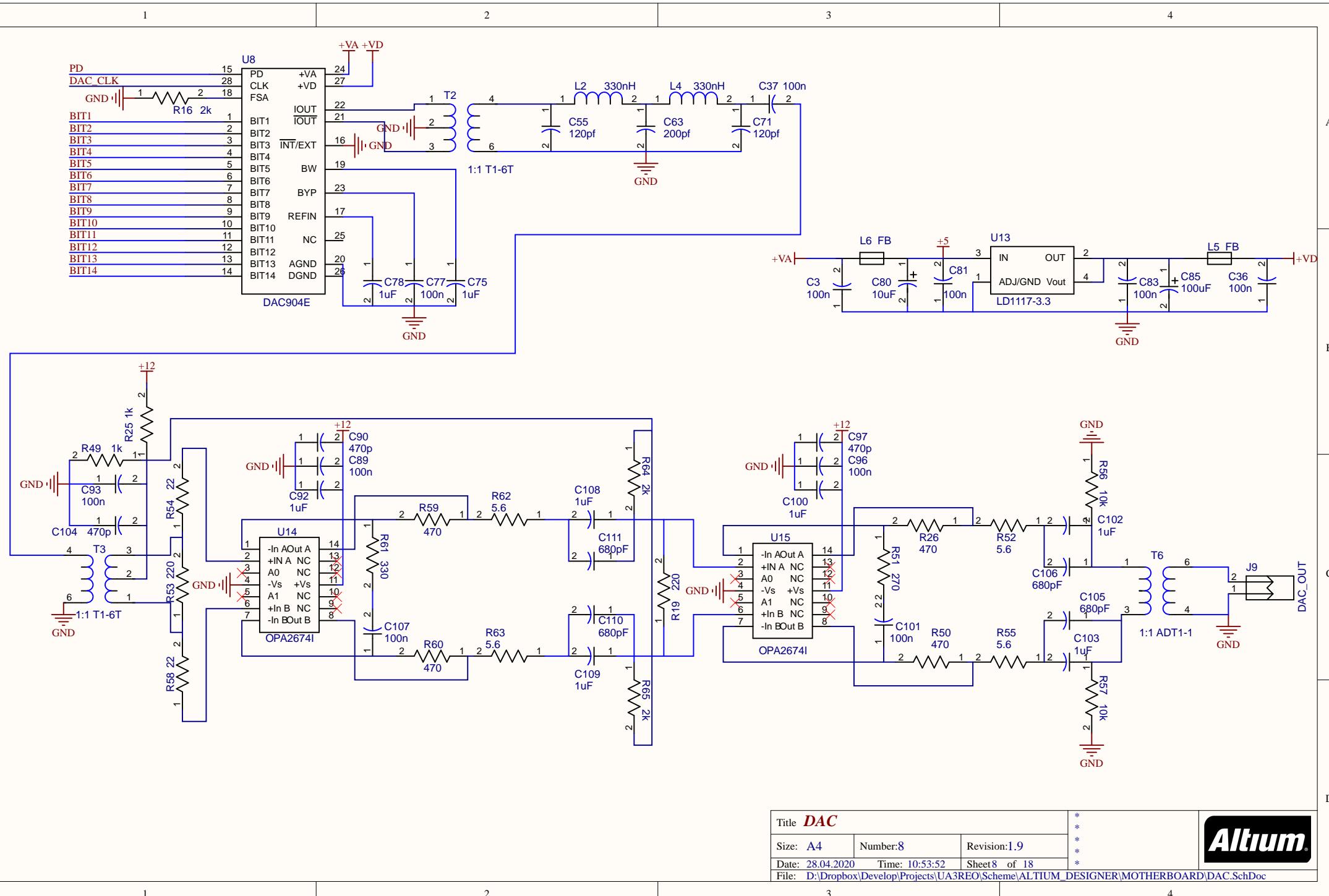
Title **CONNECTIONS**

Size: A4 Number: 7 Revision: 1.9

Date: 28.04.2020 Time: 10:53:51 Sheet 7 of 18

File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\MOTHERBOARD\CONNECTIONS.SchDoc

Altium



Title **DAC**

Size: **A4** Number:8 Revision:1.9

Date: 28.04.2020 Time: 10:53:52 Sheet 8 of 18

File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\MOTHERBOARD\DAC.SchDoc

Altium

A

EXT-CONN

F99
F98
F91
F87
F86
F85
F83
F80
F77
F76

PREAMP
CLKOUTA
DA0
DA1
DA2
DA3
DA4
DA5
DA6
DA7
DA8
DA9
DA10
DA11
DA12
DA13
DA14
DA15
DITH
SHDN
OFA
RAND
PGA
CLK_122.88M
CLK_N_122.88M

DAC_CLK
BIT1
BIT2
BIT3
BIT4
BIT5
BIT6
BIT7
BIT8
BIT9
BIT10
BIT11
BIT12
BIT13
BIT14
PD

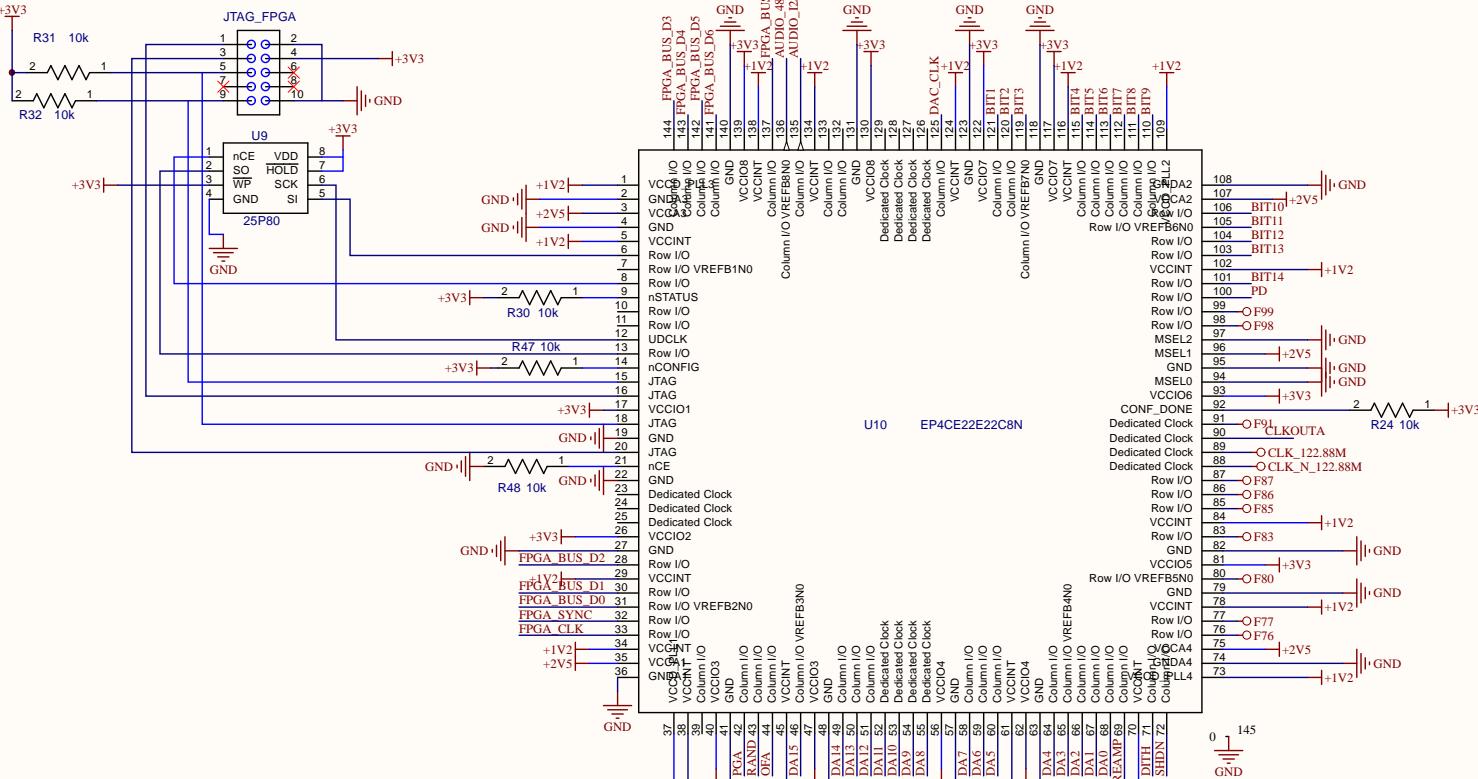
FPGA_CLK
FPGA_SYNC
AUDIO_I2S_CLOCK
AUDIO_48K_CLOCK
FPGA_BUS_D7
FPGA_BUS_D6
FPGA_BUS_D5
FPGA_BUS_D4
FPGA_BUS_D3
FPGA_BUS_D2
FPGA_BUS_D1
FPGA_BUS_D0

TO_ADC

TO_DAC

TO_STM32

B



C

Title **FPGA**

Size: A3

Number:9

Revision:1.9

Date: 28.04.2020

Time: 10:53:52

Sheet9 of 18

File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM DESIGNER\MOTHERBOARD\FPGA.SchDoc

Altium

1

2

3

4

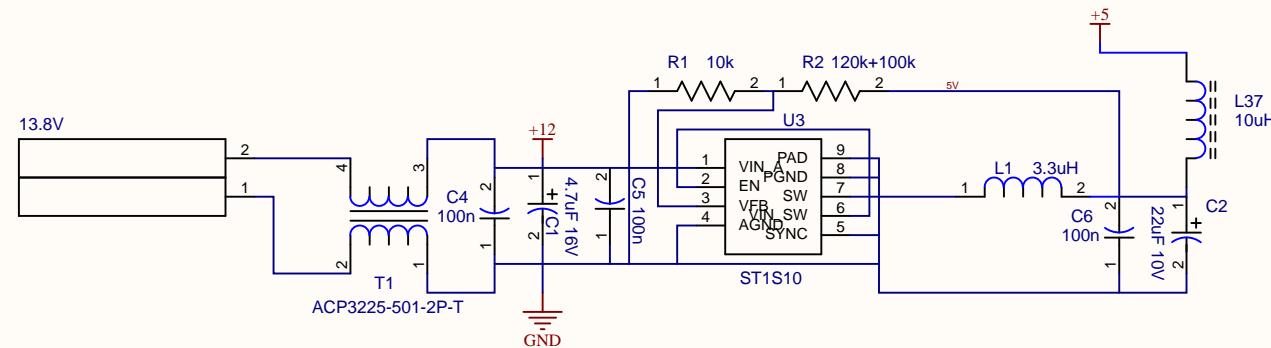
5

6

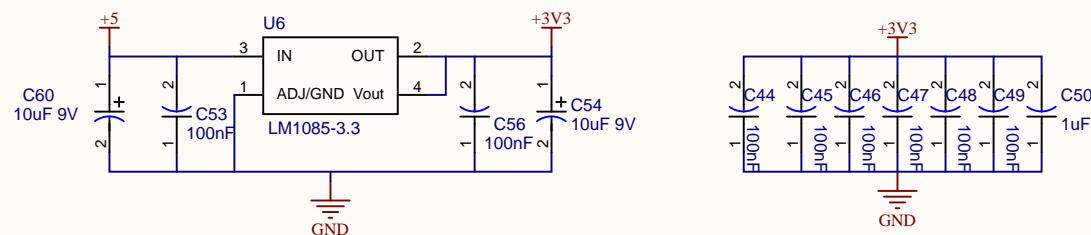
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8

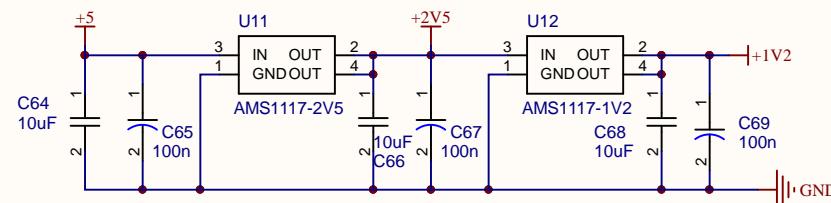
A



B



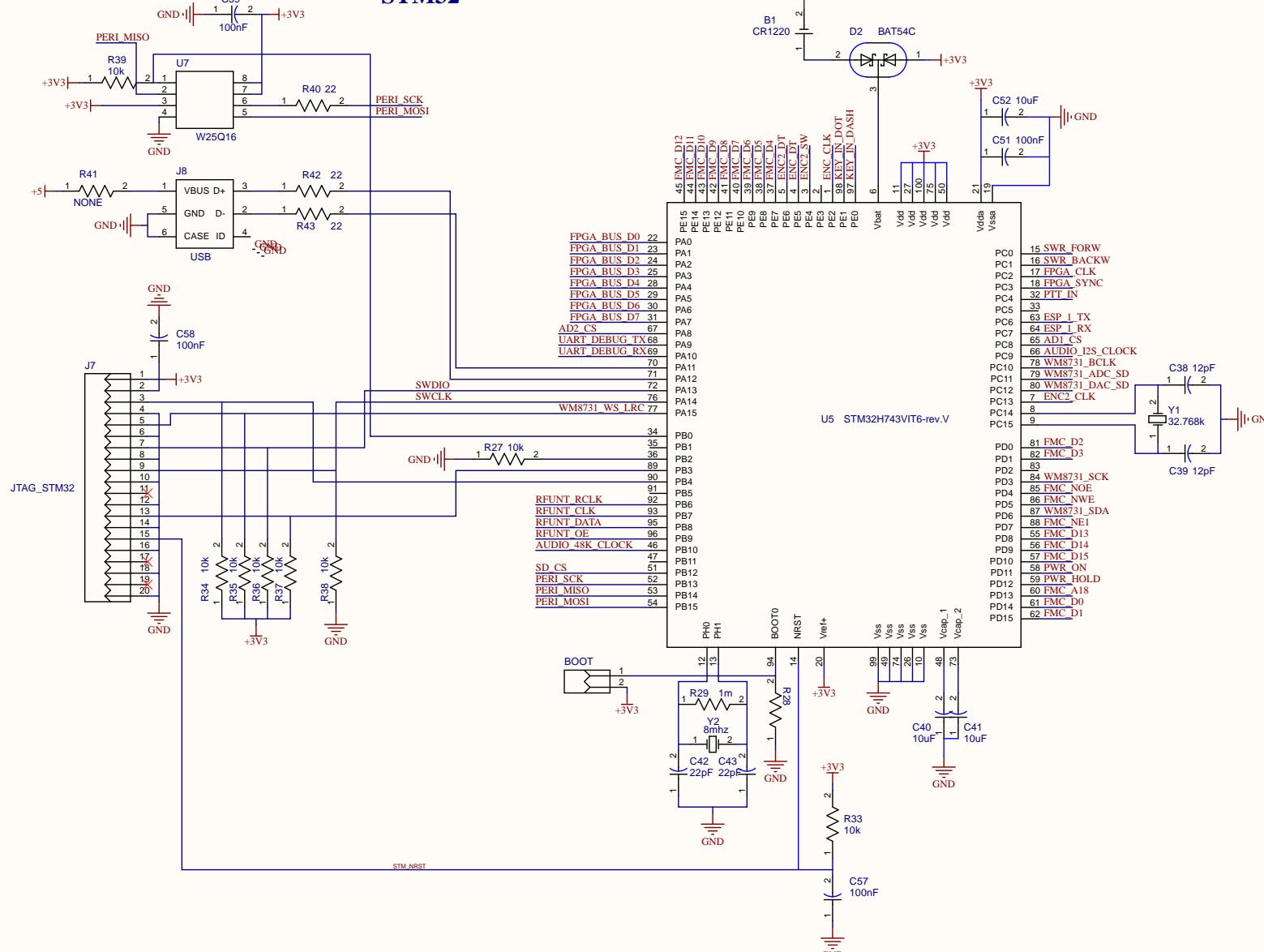
C



D

Title POWER		
Size: A4	Number: 10	Revision: 1.9
Date: 28.04.2020	Time: 10:53:52	Sheet 10 of 18
File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\MOTHERBOARD\POWER.SchDoc	*	*

STM32



FPGA CLK
FPGA_SYNC
AUDIO_48K_CLOCK
FPGA_BUS_D7
FPGA_BUS_D6
FPGA_BUS_D5
FPGA_BUS_D4
FPGA_BUS_D3
FPGA_BUS_D2
FPGA_BUS_D1
FPGA_BUS_D0

AUDIO_I2S_CLOCK
WM8731_BCLK
WM8731_ADC_SD
WM8731_DAC_SD
WM8731_SCK
WM8731_SDA
WM8731_WS_LRC

FMC_NE1
FMC_A18
FMC_NWE
FMC_NOE
STM_NRST
FMC_D0
FMC_D1
FMC_D2
FMC_D3
FMC_D4
FMC_D5
FMC_D6
FMC_D7
FMC_D8
FMC_D9
FMC_D10
FMC_D11
FMC_D12
FMC_D13
FMC_D14
FMC_D15
PWR_ON
PWR_HOLD
PERI_MISO
PERI_MOSI
SD_CS
PERI_SCK
PERI_MISO
PERI_MOSI

15 SWR_FORW
16 SWR_BACKW
17 FPGA_CLK
18 FPGA_SYNC
32_PTT_IN
33
63_ESP_1_RX
64_ESP_1_TX
65_ADI_CS
66_AUDIO_I2S_CLOCK
78_WM8731_BCLK
79_WM8731_ADC_SD
80_WM8731_DAC_SD
7_ENC2_CLK
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PC8
PC9
PC10
PC11
PC12
PC13
PC14
PC15
PD0
PD1
PD2
PD3
PD4
PD5
PD6
PD7
PD8
PD9
PD10
PD11
PD12
PD13
PD14
PD15
81_FMC_D2
82_FMC_D3
83
84_WM8731_SCK
85_FMC_NOE
86_FMC_NWE
87_WM8731_SDA
88_FMC_NE1
55_FMC_D13
56_FMC_D14
57_FMC_D15
58_PWR_ON
59_PWR_HOLD
60_FMC_A18
61_FMC_D0
62_FMC_D1

KEY_IN_DASH
KEY_IN_DOT
UART_DEBUG_TX
UART_DEBUG_RX
PTT_IN
RFUNIT_RCLK
RFUNIT_CLK
RFUNIT_DATA
RFUNIT_OE
SWR_FORW
SWR_BACKW

TO_AUDIO_CODEC

FRONT_UNIT

KEY_IN
DEBUG_UART
STM32

Title **STM32**

Size: A3 Number:11 Revision:1.9

Date: 28.04.2020 Time: 10:53:52 Sheet 11 of 18

File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM DESIGNER\MOTHERBOARD\STM32.SchDoc



A

A

B

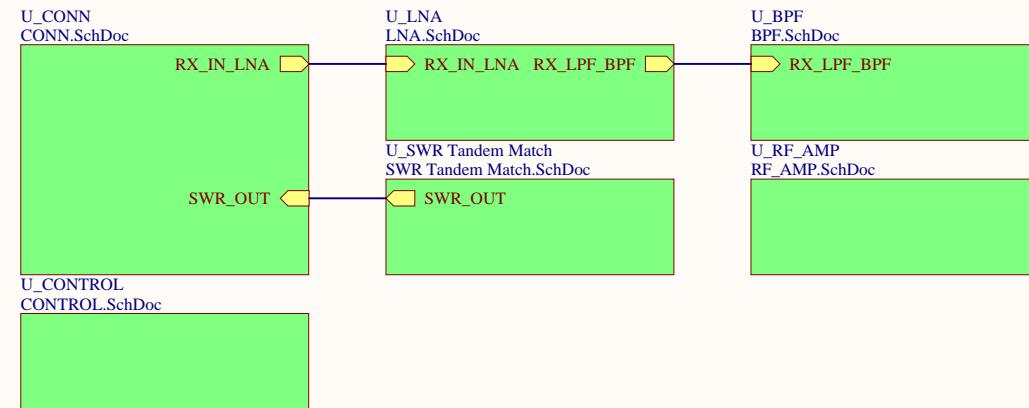
B

C

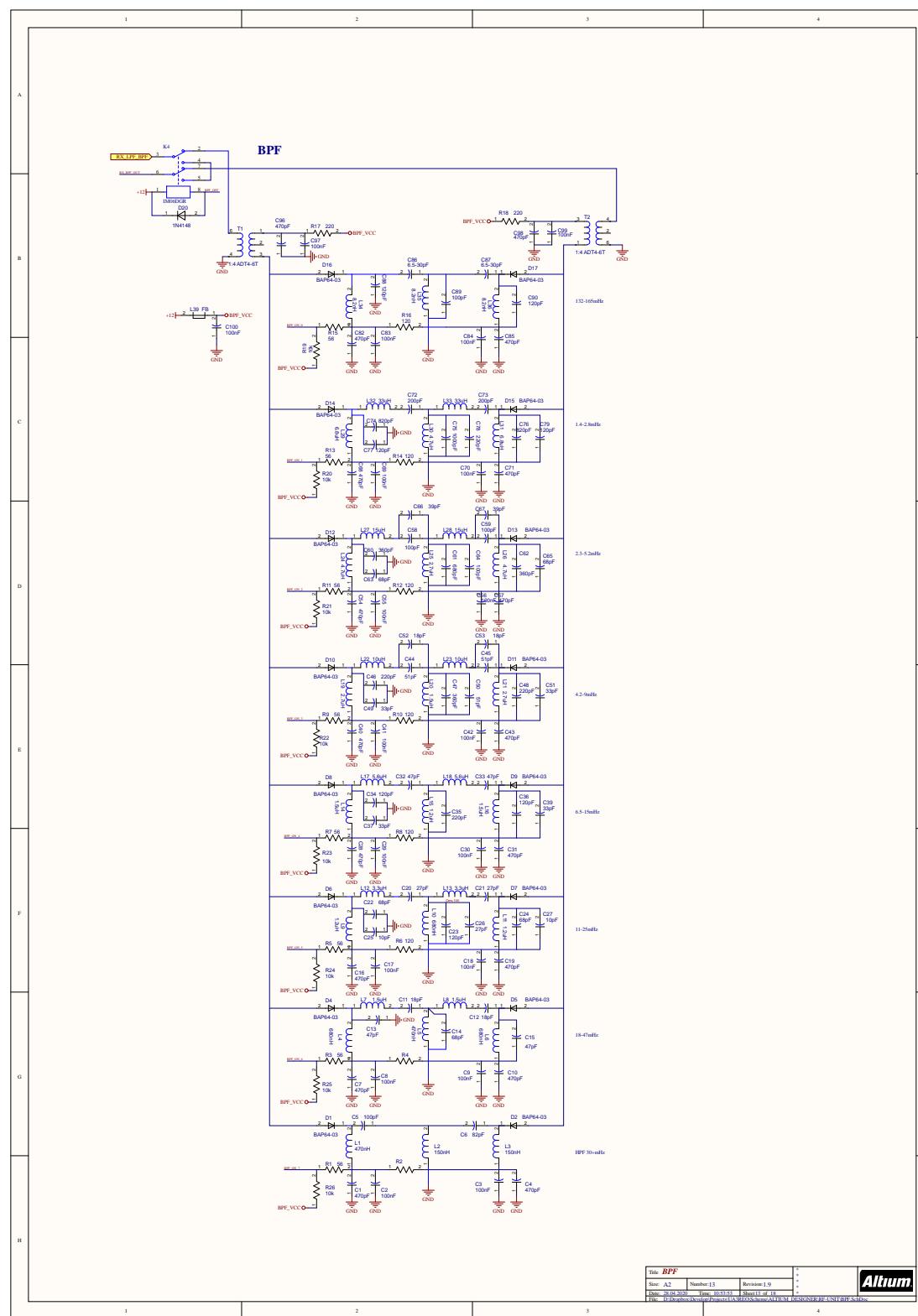
C

D

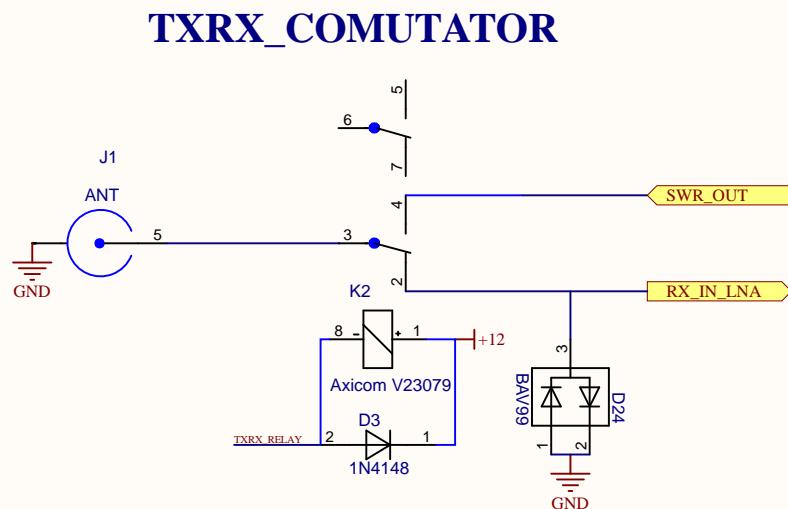
D



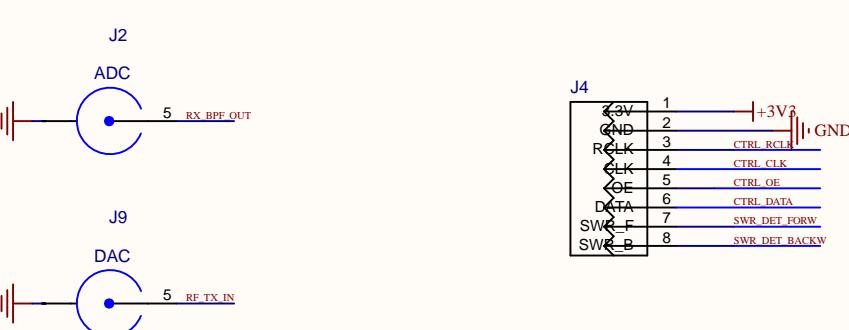
Title RF-UNIT			*
Size: A4	Number:12	Revision:1.9	*
Date: 28.04.2020	Time: 10:53:53	Sheet 12 of 18	*
File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\RF-UNIT\RF-UNIT.SCHDOC			Altium®



A



B



C



Title CONN		
Size: A4	Number: 14	Revision: 1.9
Date: 28.04.2020	Time: 10:53:53	Sheet 14 of 18
File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\RF-UNIT\CONN.SchDoc		

A

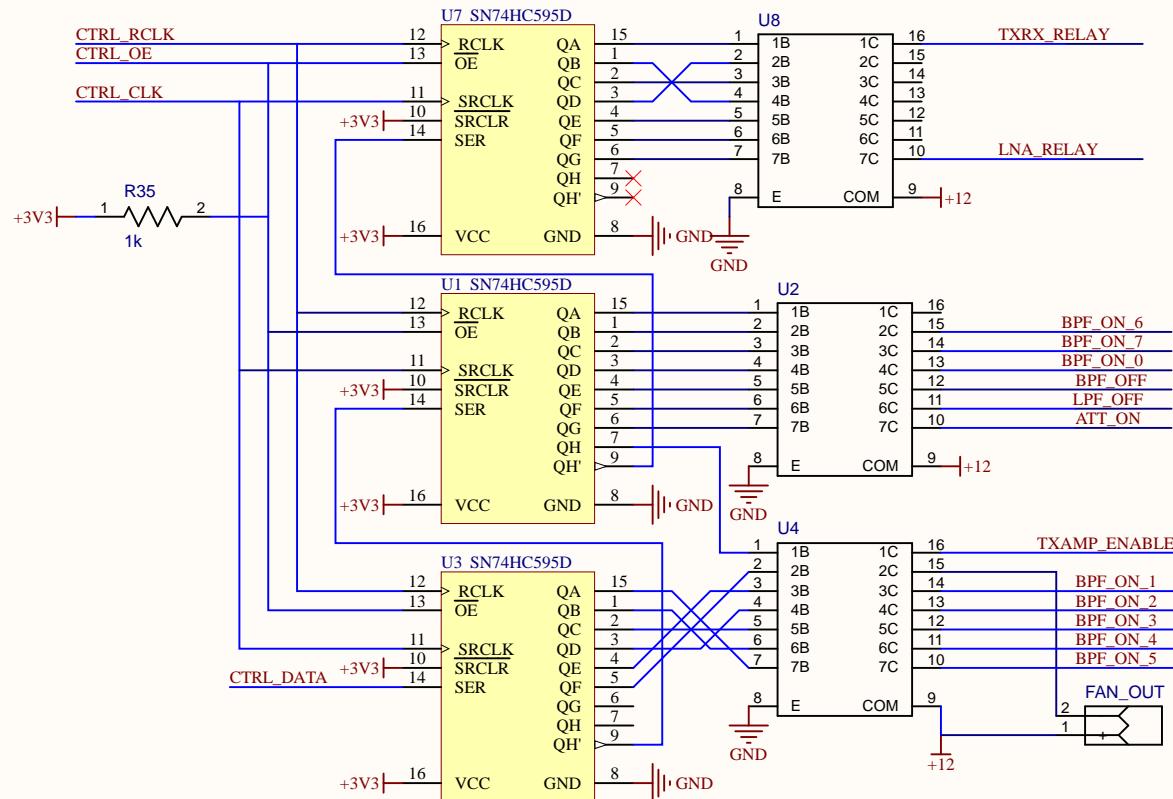
B

C

D

A

A



B

B

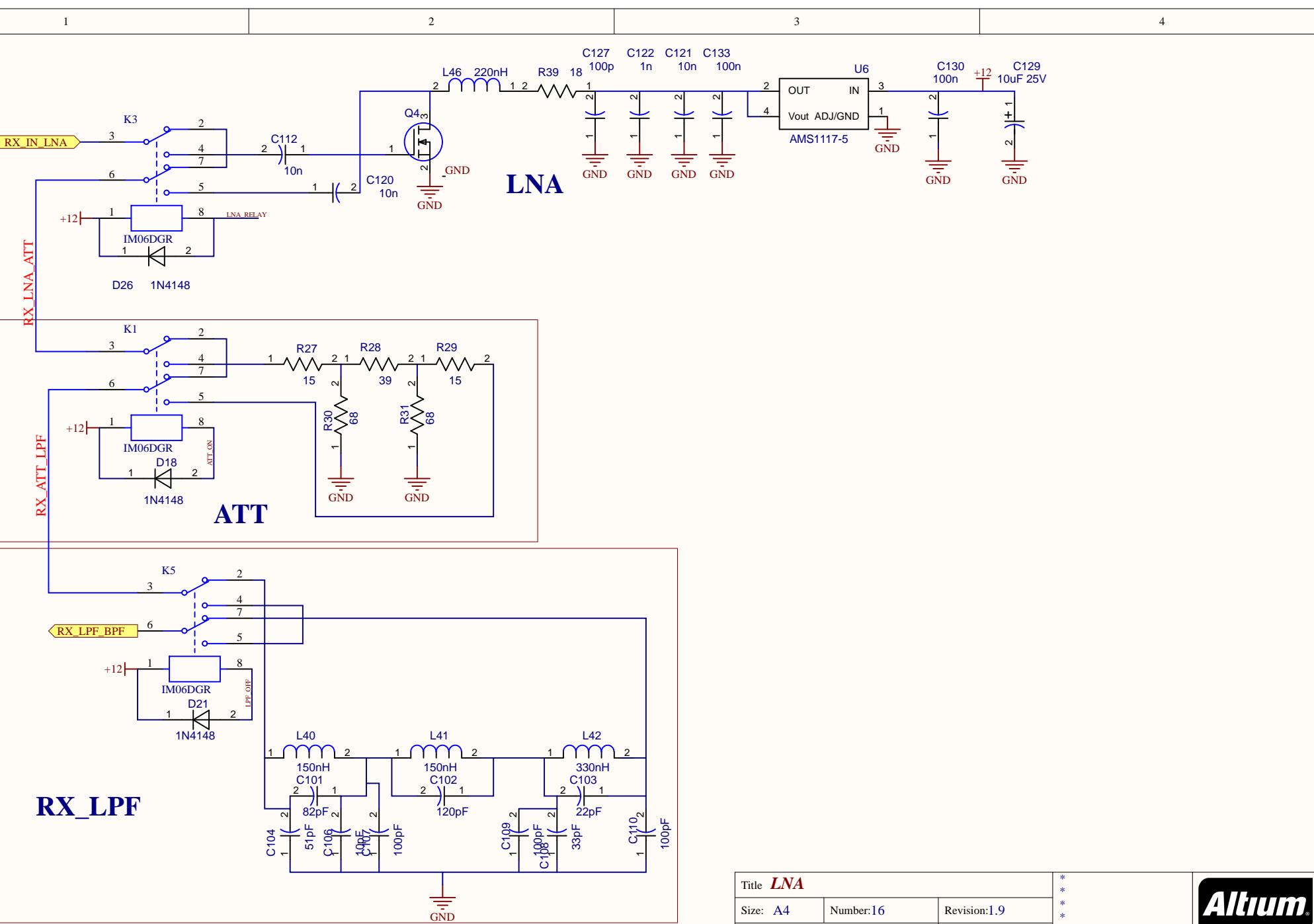
C

C

D

D

Title **CONTROL**Size: **A4** Number: **15** Revision: **1.9**Date: **28.04.2020** Time: **10:53:53** Sheet **15** of **18**File: **D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\RF-UNIT\CONTROL.SchDoc****Altium**



Title **LNA**

Size: **A4** Number:16 Revision:1.9

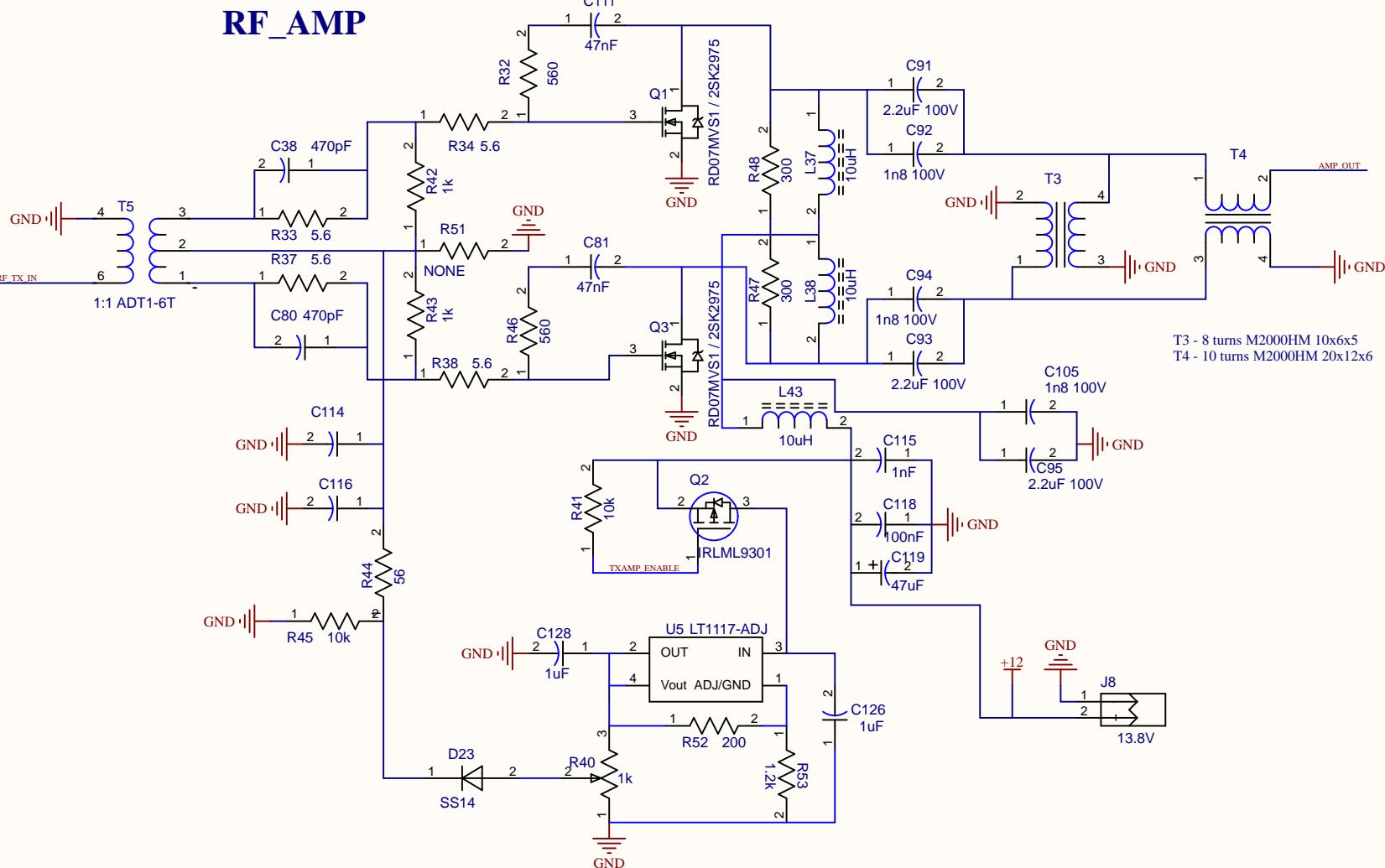
Date: 28.04.2020 Time: 10:53:53 Sheet 16 of 18

File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\RF-UNIT\LNA.SchDoc

Altium

A

RF_AMP

Title **RF_AMP**

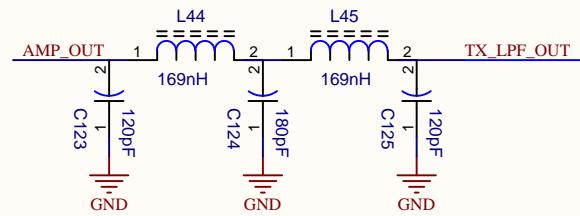
Size: A4 Number: 17 Revision: 1.9

Date: 28.04.2020 Time: 10:53:54 Sheet 17 of 18

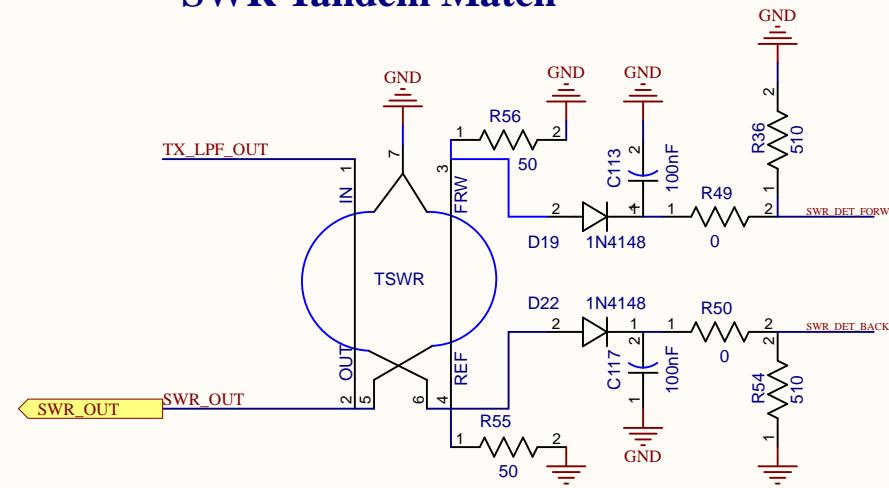
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Altium

TX_LPF



SWR Tandem Match



Title ***SWR Tandem Match***

Size: A4	Number: 18	Revision: 1.9
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Date: 28.04.2020 Time: 10:53:54 Sheet 18 of 18

File: D:\Dropbox\Develop\Projects\UA3REO\Scheme\ALTIUM_DESIGNER\RF-UNIT\SWR Tandem Match.SchDoc



Bill of Materials

Bill of Materials for Project [UA3REO.PrjMbd] (No PCB Document Selected)

Source Data From:	UA3REO.PrjMbd
Project:	UA3REO.PrjMbd
Variant:	None
Creation Date:	28.04.2020 10:54
Print Date:	28-Apr-20 10:54:06 AM

Footprint	Comment	LibRef	Designator	Description	Quantity
JX2		JX2	13.8V	JX2	1
BR1632A/FA	CR1220	BR1632A/FA	B1	BR1632A/FA	1
51022-0200		51022-0200	IND_100M_10V_2S12FA4412	51022-0200	3
CAP_AE_6.8uF_4.7uF_16V		CAP_AE_6.8uF	CAPAE_6.8uF	CAPAE_6.8x6.8x5.4	1
CAP_AE_4.3uF_22uF_10V		CAP_AE_4.3uF	CAPAE_4.3uF	CAPAE_4.3x4.3x5.4	1
CAP_0805_100n		CAP_0805	CAP0805_100n	CAP_0805	44
CAP_0805_10uF_10V		CAP_0805	CAP0805_10uF_10V	CAP_0805	9
CAP_0805_1uF_10V		CAP_0805	CAP0805_1uF_10V	CAP_0805	6
CAP_0805_22uF_10V		CAP_0805	CAP0805_22uF_10V	CAP_0805	3
CAP_AE_4.3uF_220uF_10V		CAP_AE_4.3uF	CAPAE_4.3uF_220uF_10V	CAPAE_4.3x4.3x5.4	4
CAP_0805_12pF		CAP_0805	CAP0805_12pF	CAP_0805	2
CAP_0805_10uF		CAP_0805	CAP0805_10uF	CAP_0805	4
CAP_0805_22pF		CAP_0805	CAP0805_22pF	CAP_0805	2
CAP_0805_100nF		CAP_0805	CAP0805_100nF	CAP_0805	12
CAP_AE_4.3uF_10uF_9V		CAP_AE_4.3uF	CAPAE_4.3uF_10uF_9V	CAPAE_4.3x4.3x5.4	2
CAP_0805_120pF		CAP_0805	CAP0805_120pF	CAP_0805	2
CAP_0805_200pF		CAP_0805	CAP0805_200pF	CAP_0805	1
C0805		C0805	C0805	C0805	3
EEEFC_sizeB		EEEFC_sizeB	EEEFC_sizeB	EEEFC_sizeB	1
EEEFC_sizeB	100uF	EEEFC_sizeB	C80	EEEFC_sizeB	1
CAP_0805_470p		CAP_0805	C80_C80	CAP_0805	3
CAP_1206_1uF		CAP_1206	C102_C102_C108_C109	CAP_1206	4
CAP_1206_680nF		CAP_1206	C105_C106_C110_C111	CAP_1206	4
CAP_0805_CAP_0805	CAP_0805	CAP_0805	C112_C113_C114_C115_C116_C117	CAP_0805	13
TC3528-1411		TC3528-1411	C125	TC3528-1411	1
TC3528-1411_EEEFC_sizeB		TC3528-1411_EEEFC_sizeB	C126	TC3528-1411_EEEFC_sizeB	1
BA7464		BA7464	BA7464	BA7464	1
BA7464C		BA7464C	BA7464C	BA7464C	1
51022-0300	DEBUG_UART	51022-0300	DEBUG_UART	51022-0300	1
SJ1-3523N	LIN_E_IN	SJ1-3523N	SJ1-3523N	SJ1-3523N	1
SJ1-3523N	MIC_IN	SJ1-3523N	SJ1-3523N	SJ1-3523N	1
SJ1-3523N	PHONE_OUT	SJ1-3523N	SJ1-3523N	SJ1-3523N	1
90131-0124	RF_UNIT	90131-0124	90131-0124	90131-0124	1
SJ1-3523N	KEY_IN	SJ1-3523N	SJ1-3523N	SJ1-3523N	1
90131-0142	FRONT-UNIT	90131-0142	90131-0142	90131-0142	1
90131-0130	JTAG_STM02	90131-0130	90131-0130	90131-0130	1
2-1734035-3	USB	2-1734035-3	2-1734035-3	2-1734035-3	1
644456-2	DAC_OUT	644456-2	644456-2	644456-2	1
31-5431	ADC	31-5431	31-5431	31-5431	1
IDC10		IDC10	IDC10	IDC10	1
IND_1812	3.3uH	IND_1812	IND_1812	IND_1812	1
IND_0805	330nH	IND_0805	IND_124	IND_0805	2
IND_FERRITE	FR	IND_FERRITE	IND_15_16_18	Ferrite bead on conductor	4
14-1210	IND_1206	IND_1206	IND_17	IND_1206	1
IND_FERRITE	10uH	IND_FERRITE	IND_19	Inductor	1
51022-0200	PTT_IN	51022-0200	PTT_IN	51022-0200	1
RES_0805	10k	RES_0805	R1_R6_R10_R13_R14_R15_R17_R18	RES_0805	21
RES_0805	120k+100k	RES_0805	R2	RES_0805	1
RES_0805	0NONE	RES_0805	R3	By used crystal	1
EVM1DTSX30B		EVM1DTSX30B	R4	EVM1DTSX30B	1
RES_0805	5.6k	RES_0805	R5_R6_R7_R8	RES_0805	4
RES_0805	680	RES_0805	R11	RES_0805	1
RES_0805	47k	RES_0805	R12_R13_R14_R17	RES_0805	4
RES_0805	2k	RES_0805	R18_R19_R20_R21	RES_0805	3
RES_0805	100	RES_0805	R22_R23_R24_R25	RES_0805	2
RES_0805	220	RES_0805	R26_R27_R28_R29	RES_0805	2
RES_0805	107	RES_0805	R31_R32_R33	RES_0805	2
RES_0805	82.5	RES_0805	R22_R23	RES_0805	2
RES_0805	1k	RES_0805	R26_R28	RES_0805	2
RES_0805	470	RES_0805	R23_R24_R25_R26	RES_0805	4
RES_0805	1m	RES_0805	R29	RES_0805	1
RES_0805	22	RES_0805	R31_R32_R34_R35_R36	RES_0805	5
RES_0805	NONE	RES_0805	R41	RES_0805	1
RES_0805	330	RES_0805	R51_R61	RES_0805	2
RES_1206	5.6	RES_1206	R52_R53_R54_R55	RES_1206	4
RES_0805	RES_0805	RES_0805	R56_R57	RES_0805	2
RES_0603	RES_0603	RES_0603	R58_R59	RES_0603	2
TRANSFORMER	ACP3225-501-2P	TRANSFORMER	T1	Transformer	1
TRANSFORMER	1:1 T1-6T	TRANSFORMER	T2_T3	Transformer	2
TRANSFORMER	1:4 ADT4-6T	TRANSFORMER	T4	Transformer	1
TRANSFORMER	1:1 ADT1-1	TRANSFORMER	T5	Transformer	1
PAMB403	PAMB403	PAMB403	T11	PAMB403	1
LD3985	LD3985	LD3985	T12	LD3985	1
ST1S10	ST1S10	ST1S10	T13	ST1S10	1
WM8731	WM8731	WM8731	T14	WM8731	1
STM32H743VIT6	STM32H743VIT6	STM32H743VIT6	T15	STM32H743VIT6	1
LM1085-3.3	LM1085-3.3	LM1085-3.3	T16	LM1085-3.3	1
W25Q16	W25Q16	W25Q16	T17	W25Q16	1
DAC904E	DAC904E	DAC904E	T18	DAC904E	1
22220	22220	22220	T19	22220	1
OPF144-20-22E	OPF144-20-22E	OPF144-20-22E	T20	OPF144-20-22E	1
AMS1117	2V5	AMS1117	T21	AMS1117	1
AMS1117	1V2	AMS1117	T22	AMS1117	1
L7117CST-3.3	L7117CST-3.3	L7117CST-3.3	T23	L7117CST-3.3	2
OPA2674I	OPA2674I	OPA2674I	T24_D15	OPA2674I	2
LTC2208CUP	LTC2208CUP	LTC2208CUP	T25	LTC2208CUP	1
LTDUD-16	LTC6400UD-204	CMP-0359-03855	T26	Single Channel, Low Noise, Low Distortion	1
EXT-CONN	EXT-CONN	EXT-CONN	T27	90131-0130	1
NV7050SA	12.288MHz	NV7050SA	X1	NV7050SA	1
R26-32.768	32.768k	R26-32.768	Y1	R26-32.768	1
ECS-200-20+	8mhz	ECS-200-20+	Y2	ECS-200-20-1	1

248

Approved	Notes