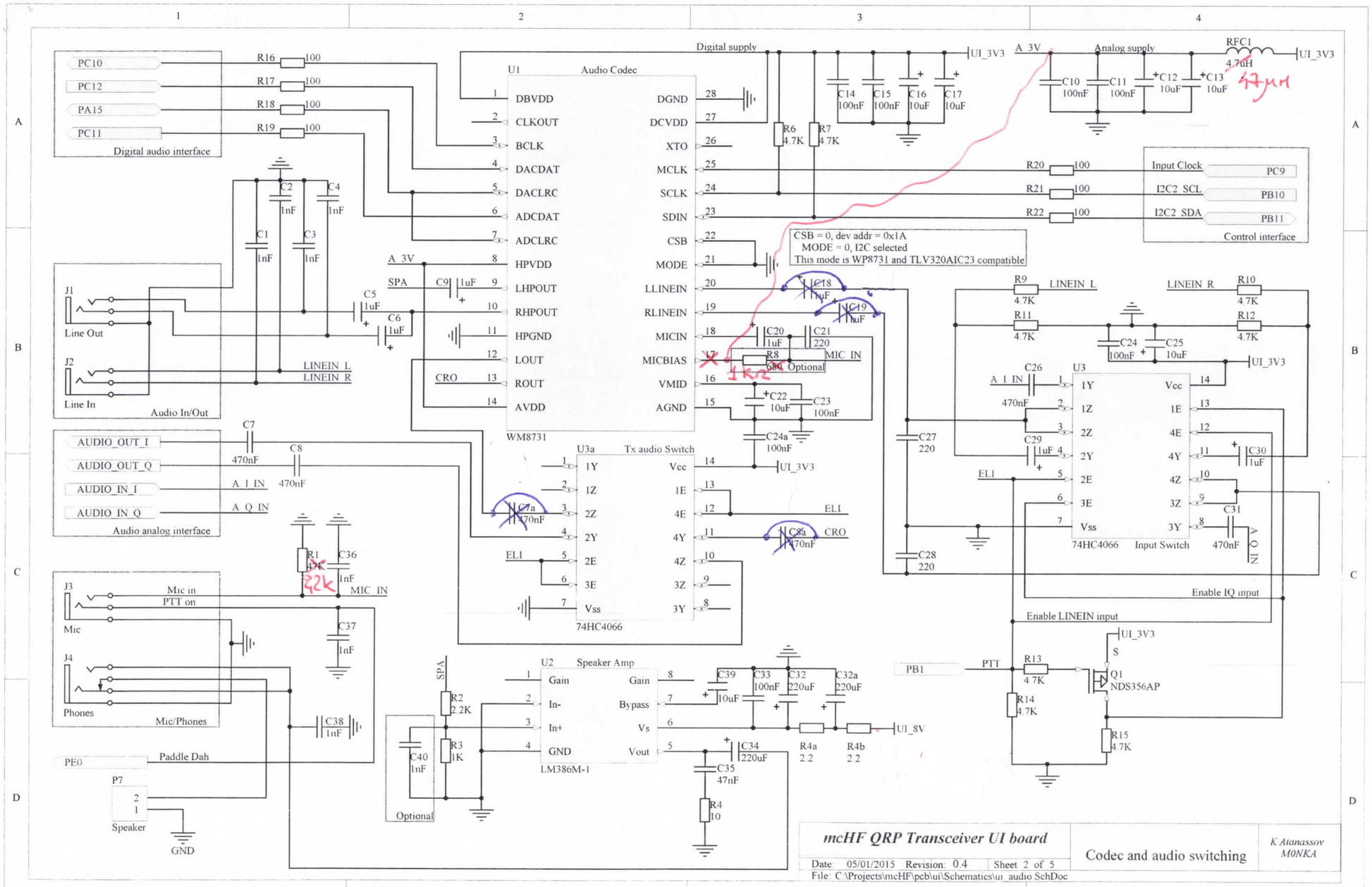
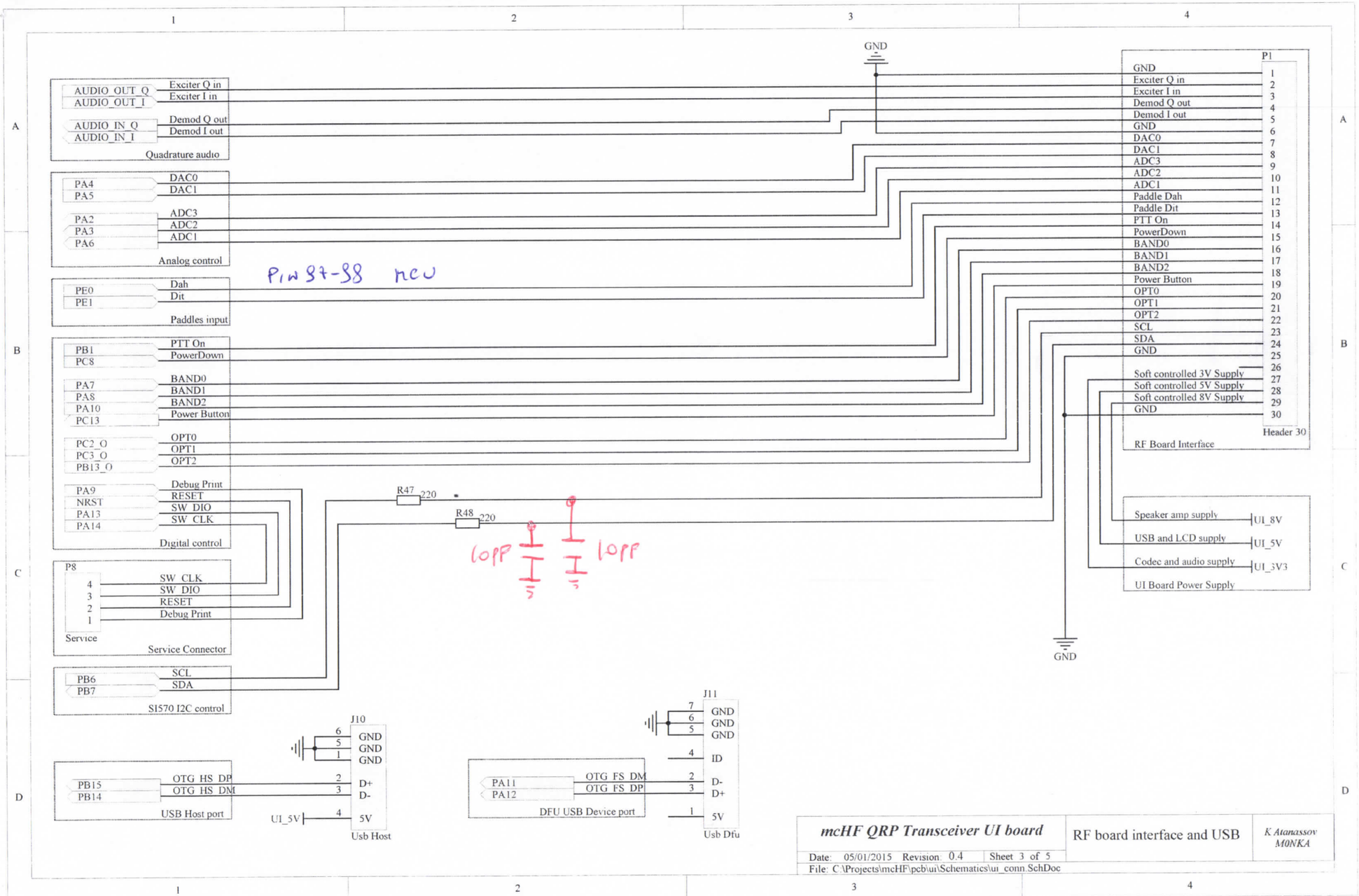
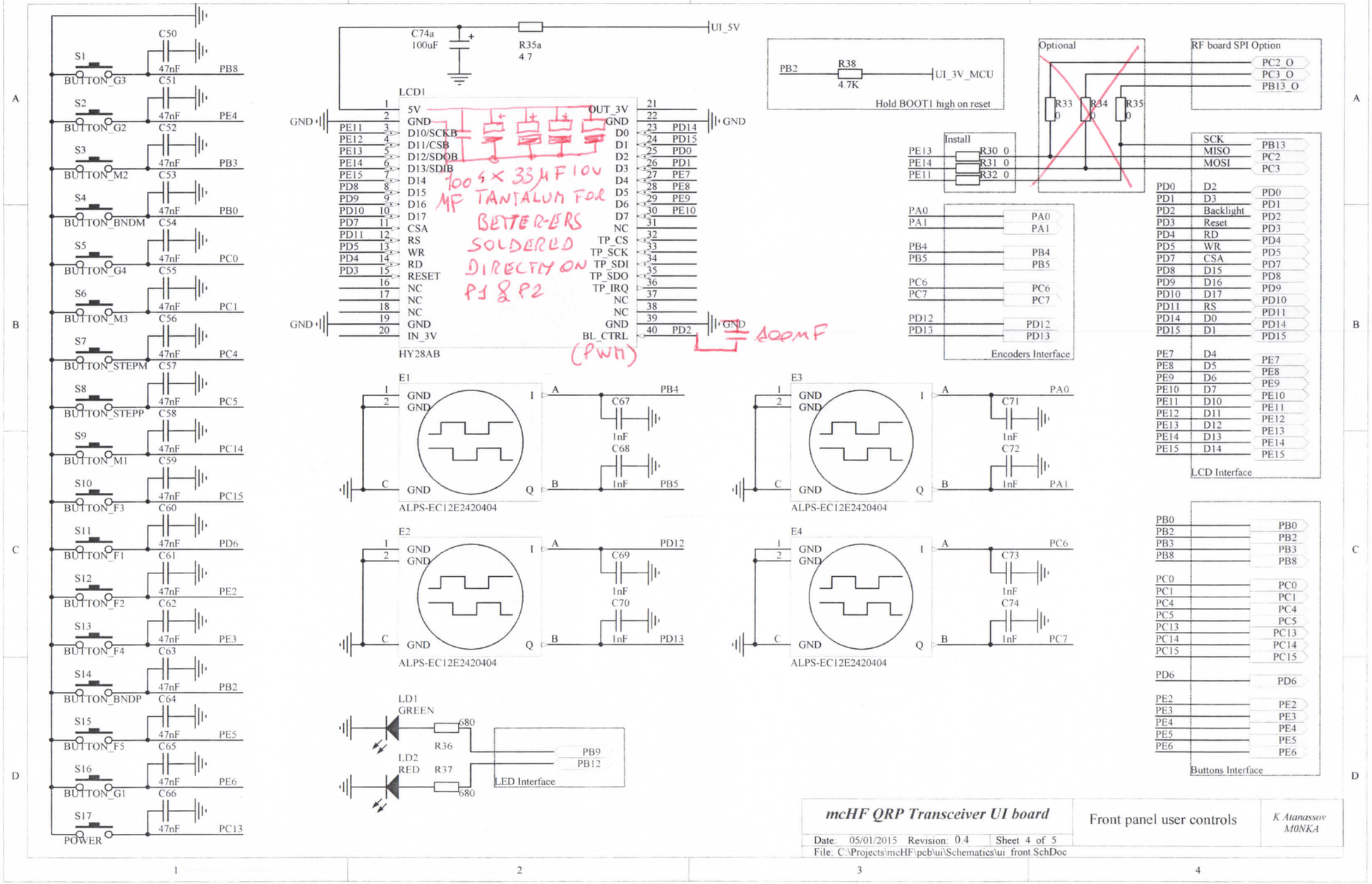
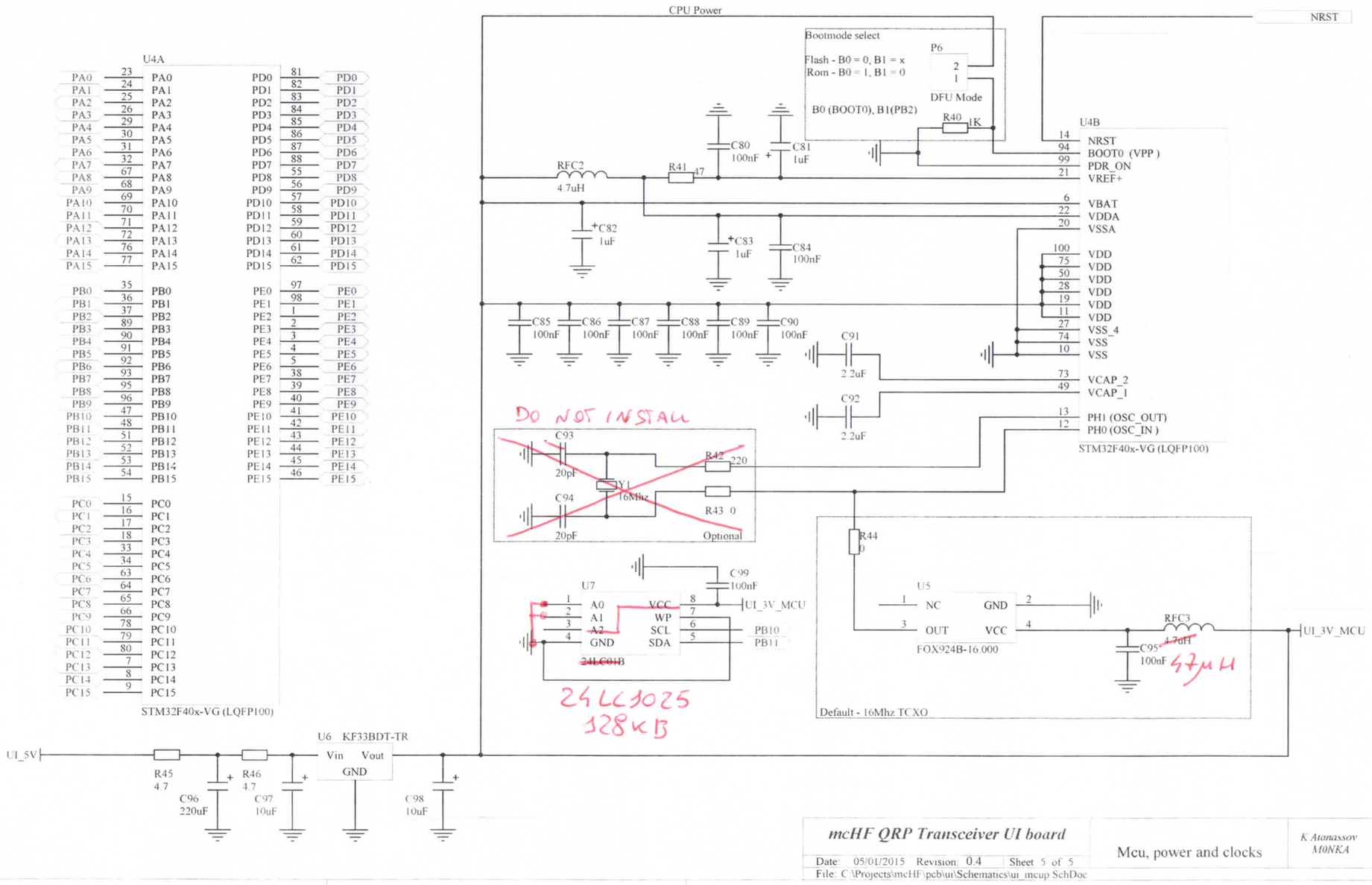

PC10
PC12
PA15
PC11
Digital audio interface
R16 100
R17 100
R18 100
R19 100
U1
Audio Codec
DBVDD
CLKOUT
BCLK
DACDAT
DACLRC
ADCDAT
ADCLRC
HPVDD
LHPOUT
RHPOUT
HPGND
LOUT
ROUT
AVDD
DGND
DCVDD
XTO
MCLK
SCLK
SDIN
CSB
MODE
LLINEIN
RLINEIN
MICIN
MICBIAS
VMID
AGND
WM8731
Digital supply
UI_3V3
A_3V
Analog supply
RFC1
4.7uH
47uH
C10 100nF
C11 100nF
C12 10uF
C13 10uF
C14 100nF
C15 100nF
C16 10uF
C17 10uF
R6 4.7K
R7 4.7K
R20 100
R21 100
R22 100
Input Clock
PC9
I2C2_SCL
PB10
I2C2_SDA
PB11
Control interface
CSB = 0, dev addr = 0x1A
MODE = 0, I2C selected
This mode is WP8731 and TLV320AIC23 compatible
C1 1nF
C2 1nF
C3 1nF
C4 1nF
C5 1uF
C6 1uF
C9 1uF
SPA
J1
Line Out
J2
Line In
LINEIN_L
LINEIN_R
Audio In/Out
C18 1uF
C19 1uF
C20 1uF
C21 220
R8 680 Optional
MIC_IN
1K2
C22 10uF
C23 100nF
C24a 100nF
CRO
R9 4.7K
LINEIN_L
R10 4.7K
LINEIN_R
R11 4.7K
R12 4.7K
C24 100nF
C25 10uF
C26 470nF
A_I_IN
U3
74HC4066
Input Switch
C27 220
C28 220
C29 1uF
C30 1uF
C31 470nF
ELI
IQ
Enable IQ input
Enable LINEIN input
AUDIO_OUT_I
AUDIO_OUT_Q
AUDIO_IN_I
AUDIO_IN_Q
Audio analog interface
C7 470nF
C8 470nF
A_I_IN
A_Q_IN
U3a
Tx audio Switch
C7a 470nF
C8a 470nF
R1 47K
22K
C36 1nF
MIC_IN
J3
Mic in
PTT on
Mic
J4
Phones
Mic/Phones
C37 1nF
C38 1nF
PE0
Paddle Dah
P7
Speaker
GND
U2
Speaker Amp
LM386M-1
Gain
In-
In+
GND
Bypass
Vs
Vout
C39 10uF
C33 100nF
C32 220uF
C32a 220uF
C34 220uF
C35 47nF
R4a 2.2
R4b 2.2
R4 10
UI_8V
R2 2.2K
R3 1K
C40 1nF
Optional
PB1
PTT
R13 4.7K
R14 4.7K
R15 4.7K
Q1
NDS356AP
mcHF QRP Transceiver UI board
Codec and audio switching
K Atanassov
M0NKA
Date: 05/01/2015 Revision: 0.4
Sheet 2 of 5
File: C:\Projects\mcHF\pcb\ui\Schematics\ui_audio.SchDoc



mcHF QRP Transceiver UI board	RF board interface and USB	*K Atanassov M0NKA*
Date: 05/01/2015 Revision: 0.4	Sheet 3 of 5	
File: C:\Projects\mcHF\pcb\ui\Schematics\ui_conn.SchDoc		


S1 BUTTON_G3 C50 47nF PB8
S2 BUTTON_G2 C51 47nF PE4
S3 BUTTON_M2 C52 47nF PB3
S4 BUTTON_BNDM C53 47nF PB0
S5 BUTTON_G4 C54 47nF PC0
S6 BUTTON_M3 C55 47nF PC1
S7 BUTTON_STEPM C56 47nF PC4
S8 BUTTON_STEPP C57 47nF PC5
S9 BUTTON_M1 C58 47nF PC14
S10 BUTTON_F3 C59 47nF PC15
S11 BUTTON_F1 C60 47nF PD6
S12 BUTTON_F2 C61 47nF PE2
S13 BUTTON_F4 C62 47nF PE3
S14 BUTTON_BNDP C63 47nF PB2
S15 BUTTON_F5 C64 47nF PE5
S16 BUTTON_G1 C65 47nF PE6
S17 POWER C66 47nF PC13
C74a 100uF
R35a 4.7
UI_5V
LCD1
HY28AB
100 x 33uF 10V MF TANTALUM FOR BETTER-ERS SOLDERED DIRECTLY ON P1 & P2
400mF
(PWM)
PB2 R38 4.7K UI_3V_MCU
Hold BOOT1 high on reset
Optional
R33 0
R34 0
R35 0
RF board SPI Option
PC2_O
PC3_O
PB13_O
Install
R30 0
R31 0
R32 0
Encoders Interface
SCK PB13
MISO PC2
MOSI PC3
LCD Interface
E1 ALPS-EC12E2420404 C67 1nF C68 1nF PB4 PB5
E2 ALPS-EC12E2420404 C69 1nF C70 1nF PD12 PD13
E3 ALPS-EC12E2420404 C71 1nF C72 1nF PA0 PA1
E4 ALPS-EC12E2420404 C73 1nF C74 1nF PC6 PC7
LD1 GREEN R36 680
LD2 RED R37 680
PB9
PB12
LED Interface
Buttons Interface
mcHF QRP Transceiver UI board
Front panel user controls
K Atanassov M0NKA
Date: 05/01/2015 Revision: 0.4 Sheet 4 of 5
File: C:\Projects\mcHF\pcb\ui\Schematics\ui_front.SchDoc


CPU Power
NRST
Bootmode select
Flash - B0 = 0, B1 = x
Rom - B0 = 1, B1 = 0
B0 (BOOT0), B1(PB2)
P6
DFU Mode
R40 1K
U4A
U4B
STM32F40x-VG (LQFP100)
RFC2 4.7uH
R41 47
C80 100nF
C81 1uF
C82 1uF
C83 1uF
C84 100nF
C85 100nF
C86 100nF
C87 100nF
C88 100nF
C89 100nF
C90 100nF
C91 2.2uF
C92 2.2uF
DO NOT INSTALL
C93 20pF
C94 20pF
Y1 16Mhz
R42 220
R43 0
Optional
U7
24LC01B
C99 100nF
UI_3V_MCU
PB10
PB11
24LC1025
128kB
R44 0
U5
FOX924B-16.000
RFC3 4.7uH
C95 100nF
47µH
Default - 16Mhz TCXO
U6 KF33BDT-TR
UI_5V
R45 4.7
R46 4.7
C96 220uF
C97 10uF
C98 10uF
mcHF QRP Transceiver UI board
Mcu, power and clocks
K Atanassov M0NKA
Date: 05/01/2015 Revision: 0.4 Sheet 5 of 5
File: C:\Projects\mcHF\pcb\ui\Schematics\ui_mcup SchDoc