REVISION HISTORY

REV	DESCRIPTION	DATE	APPROVED
A	Initial release	25.04.2020	Oguz Aydin
B	Added 120R resistors for CAN & RS485 buses	08.09.2020	Oguz Aydin

SCHEMATIC CONTENTS

SHEET01 - TITLE PAGE
SHEET02 - MCU & IOs

Title	***Protocol Droid***	
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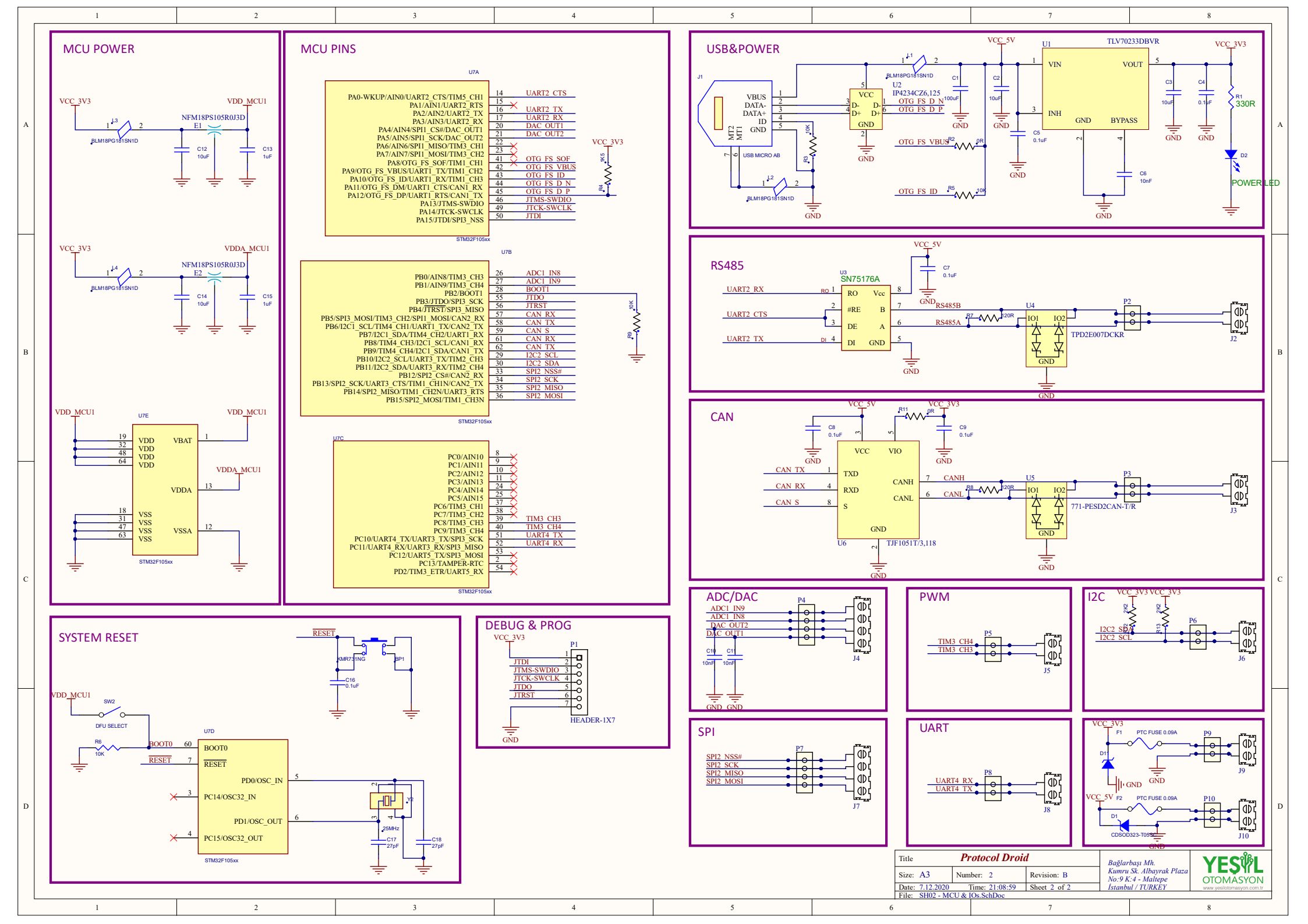
MCU POWER
VCC_3V3
VDD_MCU1
NFM18PS105R0J3D
E1
BLM18PG181SN1D
C12 10uF
C13 1uF
VDDA_MCU1
E2
C14 10uF
C15 1uF
U7E
VDD
VBAT
VDDA
VSS
VSSA
STM32F105xx
MCU PINS
U7A
PA0-WKUP/AIN0/UART2_CTS/TIM5_CH1
PA1/AIN1/UART2_RTS
PA2/AIN2/UART2_TX
PA3/AIN3/UART2_RX
PA4/AIN4/SPI1_CS#/DAC_OUT1
PA5/AIN5/SPI1_SCK/DAC_OUT2
PA6/AIN6/SPI1_MISO/TIM3_CH1
PA7/AIN7/SPI1_MOSI/TIM3_CH2
PA8/OTG_FS_SOF/TIM1_CH1
PA9/OTG_FS_VBUS/UART1_TX/TIM1_CH2
PA10/OTG_FS_ID/UART1_RX/TIM1_CH3
PA11/OTG_FS_DM/UART1_CTS/CAN1_RX
PA12/OTG_FS_DP/UART1_RTS/CAN1_TX
PA13/JTMS-SWDIO
PA14/JTCK-SWCLK
PA15/JTDI/SPI3_NSS
UART2_CTS
UART2_TX
UART2_RX
DAC_OUT1
DAC_OUT2
OTG_FS_SOF
OTG_FS_VBUS
OTG_FS_ID
OTG_FS_D_N
OTG_FS_D_P
JTMS-SWDIO
JTCK-SWCLK
JTDI
10K
U7B
PB0/AIN8/TIM3_CH3
PB1/AIN9/TIM3_CH4
PB2/BOOT1
PB3/JTDO/SPI3_SCK
PB4/JTRST/SPI3_MISO
PB5/SPI3_MOSI/TIM3_CH2/SPI1_MOSI/CAN2_RX
PB6/I2C1_SCL/TIM4_CH1/UART1_TX/CAN2_TX
PB7/I2C1_SDA/TIM4_CH2/UART1_RX
PB8/TIM4_CH3/I2C1_SCL/CAN1_RX
PB9/TIM4_CH4/I2C1_SDA/CAN1_TX
PB10/I2C2_SCL/UART3_TX/TIM2_CH3
PB11/I2C2_SDA/UART3_RX/TIM2_CH4
PB12/SPI2_CS#/CAN2_RX
PB13/SPI2_SCK/UART3_CTS/TIM1_CH1N/CAN2_TX
PB14/SPI2_MISO/TIM1_CH2N/UART3_RTS
PB15/SPI2_MOSI/TIM1_CH3N
ADC1_IN8
ADC1_IN9
BOOT1
JTDO
JTRST
CAN_RX
CAN_TX
CAN_S
I2C2_SCL
I2C2_SDA
SPI2_NSS#
SPI2_SCK
SPI2_MISO
SPI2_MOSI
U7C
PC0/AIN10
PC1/AIN11
PC2/AIN12
PC3/AIN13
PC4/AIN14
PC5/AIN15
PC6/TIM3_CH1
PC7/TIM3_CH2
PC8/TIM3_CH3
PC9/TIM3_CH4
PC10/UART4_TX/UART3_TX/SPI3_SCK
PC11/UART4_RX/UART3_RX/SPI3_MISO
PC12/UART5_TX/SPI3_MOSI
PC13/TAMPER-RTC
PD2/TIM3_ETR/UART5_RX
TIM3_CH3
TIM3_CH4
UART4_TX
UART4_RX
USB&POWER
VCC_5V
VCC_3V3
U1
TLV70233DBVR
VIN
VOUT
INH
GND
BYPASS
C1 100uF
C2 10uF
C3 10uF
C4 0.1uF
C5 0.1uF
C6 10nF
R1 330R
D2
POWER LED
J1
VBUS
DATA-
DATA+
ID
GND
MT2
MT1
USB MICRO AB
BLM18PG181SN1D
U2
IP4234CZ6,125
OTG_FS_D_N
OTG_FS_D_P
OTG_FS_VBUS
OTG_FS_ID
R2 0R
R3 10K
R5 10K
RS485
U3
SN75176A
UART2_RX
UART2_CTS
UART2_TX
RO
#RE
DE
DI
Vcc
B
A
C7 0.1uF
RS485B
RS485A
R7 120R
U4
IO1
IO2
TPD2E007DCKR
P2
J2
CAN
C8 0.1uF
C9 0.1uF
R11 0R
VCC
VIO
CAN_TX
CAN_RX
CAN_S
TXD
RXD
S
CANH
CANL
R8 120R
U5
771-PESD2CAN-T/R
P3
J3
U6
TJF1051T/3,118
ADC/DAC
P4
J4
C10 10nF
C11 10nF
PWM
P5
J5
I2C
R9 2K2
R10 2K2
P6
J6
SPI
P7
J7
UART
P8
J8
F1
F2
PTC FUSE 0.09A
D1
CDSOD323-T05SC
P9
J9
P10
J10
SYSTEM RESET
RESET
KMR731NG
SP1
C16 0.1uF
SW2
DFU SELECT
R6 10K
BOOT0
U7D
PD0/OSC_IN
PC14/OSC32_IN
PD1/OSC_OUT
PC15/OSC32_OUT
Y2
25MHz
C17 27pF
C18 27pF
DEBUG & PROG
P1
HEADER-1X7
Title
Protocol Droid
Size: A3
Number: 2
Revision: B
Date: 7.12.2020
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Sheet 2 of 2
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