STM32WB55xx Datasheet
Page 82 – Decoupling Configuration
Page 38 – Wake up capable pins (PA0, PC13, PC12, PA2, PC5)

MIC5205
150mA maximum current

5V to 3V3 LDO

TP4 TestPoint
+5V
U2 MIC5205-3.3YM5 (IN, EN, GND, OUT, BP)
+3V3
TP3 TestPoint
R6 1k
D1 MHT192CRCT
C13 4u7F
C14 4u7F
R8 1k
D2 MHT192CRCT

Internal Dev Test Switch + External Pedal Switch

+3V3
R13 10K
R14 1k
TP12 TestPoint
EXT_SWITCH
J6 External Switch
C27 100nF
+3V3
R10 10K
R12 1k
TP13 TestPoint
TEST_SWITCH
SW2 SW_MEC_5E
C26 100nF

NON BOM ITEMS

FID1 Fiducial
FID2 Fiducial
FID3 Fiducial
H1 MountingHole
H2 MountingHole
H3 MountingHole
H4 MountingHole

FABRICATION NOTE – Fiducials
Optimum size: 1mm Copper, 2mm mask

3–4 Fiducials on the edge of the PCB

3.35mm from edge of the board, including clearance of the fiducial marker.

FABRICATION NOTE – Edge Clearance
0.5mm minimum edge clearance

Edge Rails – 5mm Minimum

IO EXPANSION HEADER

J5 IO HEADER
+5V
PB4
PB5
PA6
PA7
PA8
PA9
+3V3

J1 USB_C_Receptacle_USB2.0_16P
VBUS, CC1, CC2, D-, D-, D+, D+, SBU1, SBU2, SHIELD, GND
USB_CC1
USB_CC2
USB_D-
USB_D+
U4 USBLC6-2SC6
USB_FILT_D-
USB_FILT_D+
R1 5K11
R2 5K11

+3V3
C6 100pF
C7 100nF
C10 100nF
C4 100nF
C2 100nF
C3 100nF
C5 100nF
C1 4u7F
C18 100nF
C9 4u7F
C8 100nF

MCU_nRST
C21 100nF

ECAD NOTE
Place C21 close to U1

R7 1k
D3 MHT192CRCT

Test LED

STM32WB55

U1 STM32WB55CGUx

IMU_EXTI1
IMU_EXTI2
LED
EXT_SWITCH
TEST_SWITCH
PA6
PA7
PA8
PA9
SW_DIO
SW_CLK
SW_O
PB4
PB5
IMU_SCL
IMU_SDA

NRST
VLXSMPS
SMPS_VLX
L1 10nH
L2 10uH
OSC_IN
OSC_OUT
OSC_IN_32MHZ
OSC_OUT_32MHZ
X1 32MHz
C11 8pF
C12 8pF
VFBSMPS
SMPS_VFB
C17 4u7F
RF1
RF_MCU_OUT
PH3
Boot0
PE4
PC14
PC15
OSC_IN_32k768Hz
OSC_OUT_32k768Hz
X2 32.768kHz
C16 15pF
C15 15pF
R11 1k
SW1 SW_MEC_5E
+3V3
C19 0p8F
C20 0p3F
R9 10K
C25 100nF

DESIGN NOTE:
AN5165 RF Hardware Design

L3 2.7nH
RF_FILT
FLT1 LPF
L5 2.7nH
L4 1.8nH
AE1 Feed
2450AT43B100E

TP8 TP9

Programming Header

J2 Conn_02x10_Odd_Even
+3V3
TP5 TestPoint
MCU_nRST

ST-LINK V2 ADAPTER
ARM-JTAG-20-10

Accelerometer (IMU)

+3V3
TP7
R3 5K11
R4 5K11
R5 5K11
C24 4u7F
C22 100nF
C23 100nF
U3 LIS2DH12TR (CS, SDA/SDI, SAO/SDO, SCL/SPC, GND, Vdd, Vdd_IO, INT1, INT2, RES)
IMU_EXTI1
IMU_EXTI2
TP11
TP10

Design Note
CS is for SPI Enable
1 – I2C Enabled
0 – I2C Disabled

IMU Slave Address
0b0011000b
SA0 is the LSB for Address
SA0 is internally pulled high ~20k ohms at 3.3V

The Engineering Experience
Sheet: /
File: Blue_Pedal.kicad_sch
Title: Blue Pedal
Size: A3 | Date: 2024-05-27 | **Rev: A**
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