EOS S3

IC1
EOS-S3-QFN

BANK A / BANK B

Pins (left side): VCCIOA, VCCIOA, VCCIOB, VCCIOB, VCCIOB, AVDD, LDO_VIN, LDO_VIN, VDD1, VDD2, SYS_RSTn, XTAL_I, XTAL_O, ADC0, ADC1, FSOURCE, STM, GND, AGND, Q_LED_R, ADC0_EN, SPI_MST_CS2, SPI_MST_CS2, S3IO_32_I2C1, S3IO_33_I2C1, S3IO_35_SPI_MST_CS3, PU_CTRL_USBP, S3IO_40, FBIO_41, FBIO_42

Pins (labels): FBIO2, FBIO4, FBIO5/SDA_0_DPU, FBIO7, FBIO11, FBIO12, FBIO13, FBIO_15/SW_DP_IO, FBIO_14/SW_DP_CLK, FBIO_10, FBIO_9, FBIO_8, USR_BUTTON, FBIO_6/FCLK, FBIO3/SENSOR_INT_0, SDA_0, SCL_0, FBIO_16/SPI_SLAVE_CLK, FBIO_17/SPI_SLAVE_MISO, FBIO_20/SPI_SLAVE_SSn, FBIO_19/SPI_SLAVE_MOSI, FBIO_23, FBIO_24, FBIO_25, FBIO_28, FBIO_29, FBIO_30, FBIO_31, FBIO_34/SPI_MASTER_CLK, FBIO_36/SPI_MASTER_MISO, FBIO_38/SPI_MASTER_MOSI, FBIO_39/SPI_MASTER_SSn, FBIO_43/AP_INTERRUPT, FBIO_44/SW_DP_IO, FBIO_45/SW_DP_CLK, FBIO_18, FBIO_21

Net names: S3IO_2, S3IO_4, S3IO_5, S3IO_7, S3IO_11, S3IO_12, S3IO_13, SWD_IO, SWD_CLK, S3IO_10, S3IO_9, S3IO_8, USR_BUTTON, IMU_INT, I2C_SDA, I2C_SCL, SPI_SLV_CLK, SPI_SLV_MISO, SPI_SLV_CSn, SPI_SLV_MOSI, I2S_WCLK, I2S_DOUT, S3IO_25, PDM_DATA, PDM_CKO, S3IO_30, I2S_CLK, SPI_MST_CLK, SPI_MST_MISO, SPI_MST_MOSI, SPI_MST_SS, HEADER_P6, HEADER_TX, HEADER_RX, Q_LED_B, Q_LED_G

FBIO_8 and FBIO_9 are bootstrap pins for HS oscillator.
They should be pulled-down for internal HSO
FBIO_19 and FPIO_20 are bootstrap pins for SPI flash boot.
They must be pulled low

C14 4u7, C16 4u7, R6 10k, TP1, TP2, VDD2, VDD1, +3V3
X1 ECS-_327-12_5-34B-TR, C6 12p, C7 12p
R9 1k5, R7 22R, R11 22R
TP5, TP6
USB_D_N, USB_D_P, S3_USB_D_N, S3_USB_D_P

R14 10k, R15 10k
J7, J1 61300211121
R23 10k, R31 10k, R22 10k DNP, R21 10k DNP
Mount R23 for debug mode, otherwise R22

C12 100n, C13 100n, C15 100n, C17 100n

Maximum power consumption for A and B rails:
LDO mode: 65mA (VCCIOA) 114mA (VCCIOB)
LDO bypass mode: 77mA (VCCIOA) 269mA (VCCIOB)

Flash memory (16Mbit)

U3 GD25Q16CWIGR
R10 10k, R8 10k
SPI_MST_MOSI, VCC, SI(IO0), SO(IO1) SPI_MST_MISO
SPI_WP, WP(IO2)
SPI_HOLD, HOLD(IO3)
SPI_MST_SS, CS
SPI_MST_CLK, SCLK, VSS
C8 100n
operating current max. 20 mA
This flash can be replaced with a 64Mbit one (GD25Q64CWIGR)

Buttons, LEDs

S2 KMR2, USR_BUTTON
SYS_RST, KMR2
D4 ASMB-MTB1-0A3A2, VCC Blue Green Red
R24 100R LED_B, R26 100R LED_G, R25 220R LED_R
Q2 2N7002PV, Q_LED_R, LED_R
Q3 2N7002PV, Q_LED_B, LED_B, Q_LED_G, LED_G

Battery charger and battery voltage measurement

U2 MCP73831T-2ACI_OT
+VBUS, +VBAT
212mA charge current
R2 4k7, PG, C19 1u, Q4 DMG1012T-7
R3 1k5, D2 LG_L29K-G2J1-24-Z, C2 4u7
R12 100k, Q1 NX3008CBKV, ADC0
ADC0_EN, R37 10k, R16 200k, R17 100k

USB

J5 0473460001
+VBUS
1 USB_D_N, 2 USB_D_P, 3 USB_ID
D3 TPD2EUSB30DRTR
R36 10k DNP, C5 4u7

Supply

+VBUS, +VBAT, +3V3
D1 MBR0520LT1G
U1 TPS62821DLCR, L1 DFE201610E-R47M=P2
R1 1M5, C1 4u7, VIN, SW, EN, PG, FB, AGND, PGND
C3 100p, R4 453k, C4 22u, R5 100k
+VBAT
S2B-PH-SM4-TB_LF_SN_ J4

Microphone

MIC1 IM69D130
R13 100R
PDM_DATA, PDM_CKO
VDD, DATA, CLOCK, SELECT, GND
C9 100n

Pressure sensor

U4 DPS310
+3V3, C10 100n
VDDIO, VDD, SDI, SDO, SCK, CSB
I2C_SDA, I2C_SCL
I2C slave addr: 0x77

Accelerometer

U5 MC3635
+3V3, C11 100n
R18 4k7, R19 10k, R20 4k7
VDD, VDDIO, DOUT_A1, DIN_SDA, INTN, CSN, SCK_SCL, NC, GND, VPP
I2C_SDA, IMU_INT, I2C_SCL
operating current for 1V8 supply
max. 36mA
low-power mode: max. 2.8mA
I2C slave addr: 0x4C

Headers

J6 FTSH-105-01-L-DV-K
R32 10k, R34 10k, SWD_IO, SWD_CLK, SYS_RST
C18 100n, D6 SD05C.TCT
D11 TPD2EUSB30DRTR, SWD_SO, SYS_RST
D5 TPD2EUSB30DRTR, SWD_IO, SWD_CLK
J3 1x16_pinhead DNP
R28 22R, R29 22R, R30 EXB2HV220JV
ADC1, S3IO_30, S3IO_25, S3IO_13, S3IO_2, SPI_MST_CLK, SPI_MST_MOSI, SPI_MST_MISO, HEADER_RX, HEADER_TX
J2 1x12_pinhead DNP, R41 EXB2HV220JV
HEADER_BAT
R38 22R, R39 22R, R40 22R
SPI_MST_CS2, S3IO_32_I2C1, S3IO_33_I2C1, SPI_SLV_CSn, SPI_SLV_MOSI, SPI_SLV_MISO, SPI_SLV_CLK, HEADER_P6, IMU_INT, I2C_SCL, I2C_SDA
J8 2x8_pinhead
R33 EXB2HV220JV, R42 EXB2HV220JV
PDM_DATA, PDM_CKO, I2S_WCLK, I2S_DOUT, I2S_CLK, S3IO_11, S3IO_12, S3IO_4
S3IO_5, S3IO_7, S3IO_8, S3IO_10, S3IO_40, USR_BUTTON

open source hardware
antmicro
QuickLogic

Logo N1 oshw_logo
Logo N2 qL_logo

M1 mounting_pad, M2 mounting_pad, M3 mounting_pad, M4 mounting_pad

Antmicro Ltd.
www.antmicro.com
Sheet: /
File: quickfeather-board.sch
Title: QuickFeather Development Kit
Size: A3   Date: Rev: 1.1
KiCad E.D.A. kicad 5.1.5+dfsg1-2bpo10+1   Id: 1/1