EOS S3

IC1
EOS-S3-QFN

BANK A / BANK B

VCCIOA, VCCIOA, VCCIOB, VCCIOB, VCCIOB, AVDD, LDO_VIN, LDO_VIN, VDD1, VDD2, SYS_RSTn, XTAL_I, XTAL_O, ADC0, ADC1, FSOURCE, STM, GND, AGND

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, 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_22, FBIO_26, FBIO_27, FBIO_32, FBIO_33, 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, FBIO_40/M_SSn1, FBIO_41, FBIO_42

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_27, 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

C14 4u7, C16 4u7, VDD2, VDD1, +3V3, R6 10k, TP1, TP2, VDD1, VDD2, SYS_RST, X1 ECS-_327-12_5-34B-TR, C6 12p, C7 12p, Q_LED_R, ADC0_EN, SPI_MST_CS2, S3IO_32_I2C1, S3IO_33_I2C1, S3IO_35_SPI_MST_CS3, PU_CTRL_USBP, S3IO_40, R9 1k5, R7 22R, TP5, USB_D_N, USB_D_P, R11 22R

TP6

R14 10k, R15 10k, GND, 61300211121, J7, J1, +3V3, R23 10k, R31 10k, R22 10k, R21 10k, DNP, GND, Mount R23 for debug mode, otherwise R22.

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.

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

C12 100n, C13 100n, C15 100n, C17 100n, +3V3, GND

Flash memory (16Mbit)

U3 GD25Q16CWIGR
+3V3, R10 10k, R8 10k, SPI_MST_MOSI, SPI_WP, SPI_HOLD, SPI_MST_SS, SPI_MST_CLK
VCC, SI(IO0), SO(IO1), WP(IO2), HOLD(IO3), CS, SCLK, VSS
SPI_MST_MISO, C8 100n, GND

operating current max. 20 mA

This flash can be replaced with a 64Mbit one (GD25Q64CWIGR)

Buttons, LEDs

S2 KMR2, USR_BUTTON, SYS_RST, +3V3, D4 ASMB-MTB1-0A3A2, VCC Blue Green Red, R24 100R LED_B, R26 100R LED_G, R25 220R LED_R
Q2 2N7002PV, Q3 2N7002PV, Q_LED_R, Q_LED_B, Q_LED_G, LED_R, LED_B, LED_G, GND

Battery charger and battery voltage measurement

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

USB

J5 0473460001, HEADER_A5, +VBUS, DNP R35 22R, USB_D_N, USB_D_P, USB_ID, DNP R36 10k, D3 TPD2EUSB30DRTR, C5 4u7, GND

Supply

+VBUS, +VBAT, D1 MBR0520LT1G, U1 TPS62821DLCR, L1 DFE201610E-R47M=P2, +3V3
VIN, SW, EN, PG, FB, AGND, PGND, R1 1M8, C1 4u7, C3 100p, R4 453k, R5 100k, C4 22u, +VBAT, S2B-PH-SM4-TB_LF_SN_ J4, GND

Microphone

MIC1 IM69D130, +3V3, R13 100R, PDM_DATA, PDM_CKO, VDD, DATA, CLOCK, SELECT, GND, C9 100n, GND

Pressure sensor

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

Accelerometer

U5 MC3635, +3V3, 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, C11 100n
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, +3V3, R32 10k, R34 10k, SWD_IO, SWD_CLK, SYS_RST, C18 100n, D6 SD05C.TCT, GND
D11 TPD2EUSB30DRTR, SWD_SO, SYS_RST, D5 TPD2EUSB30DRTR, SWD_IO, SWD_CLK
J3 1x16_pinhead, SYS_RST, HEADER_3V3, const ADC1 R28 22R, const S3IO_27 R29 22R, const S3IO_25, const S3IO_13, const S3IO_2, const SPI_MST_CLK, const SPI_MST_MOSI, const SPI_MST_MISO, const HEADER_RX, const HEADER_TX, R30 EXB2HV220JV, GND
J2 1x12_pinhead, +VBAT, HEADER_BAT, SPI_MST_CS2 R38 22R, S3IO_32_I2C1 R39 22R, S3IO_33_I2C1 R40 22R, SPI_SLV_CSn, SPI_SLV_MOSI, SPI_SLV_MISO, SPI_SLV_CLK, HEADER_P6, IMU_INT, I2C_SCL, I2C_SDA, R41 EXB2HV220JV
J8 2x8_pinhead, +3V3, J8.1...J8.16, GND
R33 EXB2HV220JV, PDM_DATA, PDM_CKO, I2S_WCLK, I2S_DOUT, I2S_CLK, S3IO_11, S3IO_12, S3IO_4
R42 EXB2HV220JV, S3IO_5, USR_BUTTON, S3IO_7, S3IO_8, S3IO_10, S3IO_40

M1 mounting_pad, M2 mounting_pad, M3 mounting_pad, M4 mounting_pad

Logo N1 oshw_logo, Logo N2 qL_logo

open source hardware, antmicro, QuickLogic