VCC-3V3B VCC-3V3B

C20
100nF

VCC-3V3

R12
100K

U3

VDD   SDA   AMBL-SDA

ADR   INT   AMBL-INT

GND   SCL   AMBL-SCL

TSL2561

CN2   USB MINIAB

VBUS 1
D-   2
D+   3
ID   4
GND   5

R59
1M

C9
100nF

D7

1 LC ESD P   VBUS ESD 6
2 LC ESD P   NC   5
3 LC ESD P   NC   4

PUSBM5V5X4-TL,115

VCC-USB

FP3
FERRITE

D_N
D_P

R23   8K2
R24   33
R25   33

USB-D_N
USB-D_P

C34
10nF

R26
15K

USB_VBUS
USB_DN
USB_DP

VCC-5VEXT

FP2
FERRITE

1   50
2   49   BAT_SW   MB3_CS
3   48   MB_SPI_SCK   MB3_AN
4   47   MB_SPI_MISO   MB3_RST
5   46   MB_SPI_MOSI   MB3_PWM
6   45   UART1_RX   MB3_INT
7   44   UART1_TX   SDHC_CLK
8   43   I2C1_SCL   SDHC_CMD
9   42   I2C1_SDA   SDHC_DAT0
10   41   MB1_CS   SDHC_DAT1
11   40   MB1_AN   SDHC_DAT2
12   39   MB1_RST   SDHC_DAT3
13   38   MB1_PWM   UART2_TX
14   37   MB1_INT   UART2_RX
15   36   MB2_CS   UART3_TX
16   35   MB2_AN   UART3_RX
17   34   MB2_RST   I2S_MCLK
18   33   MB2_PWM   I2S_RXD
19   32   MB2_INT   I2S_RX_FS
20   31   MK64_SWDIO   I2S_RX_BCLK
21   30   SWDCLK   I2S_TXD
22   29   MK64_RST   I2S_TX_FS
23   28   MKW40_RST   I2S_TX_BCLK
24   27   MKW40_SWDIO
25   26

VCC-3V3

VCC-3V3

C35
100nF

R27   R28
10K   100K

R29
100K

U6

1	CS	VCC	8
2	SDO	HOLD	7
3	WP	SCK	6
4	GND	SDI	5

W25Q64FVSSIG

Flash_CS

Flash_SDO

R30   27

Flash_SCK

Flash_SDI

VCC-1V8   VCC-HRM   VCC-HRM

C40   C41   C42
100nF   10nF   10uF

HRT_SCL

HRT_SDA

U8

VCC-HRM

VCC-1V8

R32
100K

1	NC	NC	14
2	SCL	INT	13
3	SDA	GND	12
4	PGND	VDD	11
5	R_DRV	VLED+	10
6	IR_DRV	VLED+	9
7	G_DRV	NC	8

HRT_INT

MAX30101_adapter

PowerMng
PowerMng.SchDoc

BAT_SENS_EN — PTC14
BAT_SENS — BAT_SENS
CHG_STATE — PTC12
LDO_EN — PTA29
BOOST_EN — PTC13
3V3B_EN — PTB12
BAT_SW — BAT_SW

RGB_LED & Vibro_Mot
RGB_LED&VibroMot.SchDoc

RGB_R — PTC8
RGB_G — PTD0
RGB_B — PTC9
VIBRO — PTB9

AmbiLight
AmbiLight.SchDoc

AMBL-SCL — I2C0_SCL
AMBL-SDA — I2C0_SDA
AMBL-INT — PTC0

Heart-Rate
Heart-Rate.SchDoc

HRT_SCL — I2C0_SCL
HRT_SDA — I2C0_SDA
HRT_INT — PTB18

Accel&Mag
Accel&Mag.SchDoc

Accel_SCL — I2C1_SCL
Accel_SDA — I2C1_SDA
Accel_RST — PTC15
Accel_INT1 — PTC1
Accel_INT2 — PTD13

Gyro
Gyro.SchDoc

Gyro_SCL — I2C1_SCL
Gyro_SDA — I2C1_SDA
Gyro_RST — PTD1
Gyro_INT1 — PTD1
Gyro_INT2 — PTC18

Pressure&Temp
Pressure&Temp.SchDoc

Pressure_SCL — I2C1_SCL
Pressure_SDA — I2C1_SDA
Pressure_INT1 — PTD12
Pressure_INT2 — PTD10

Humidity&Temp
Humidity&Temp.SchDoc

Humidity_SCL — I2C0_SCL
Humidity_SDA — I2C0_SDA

VCC-3V3

U1A
MK64FN1M0VDC12

SWDCLK J6
MK64_SWDIO H8
PTA4 J7
BAT_SW

TCLK   PTA15 L9   I2S0_RXD0
TDI   PTA16 J10   I2S0_RX_FS
TDO   PTA17 H10   I2S0_MCLK
TMS   A
TRST

PTA10 J9
PTA11 J4
PTA12 K8
PTA13 L8
PTA14 K9

PTA10   PTB7 E11   PTB7
PTA11
PTA12
PTA13
PTA14

U1B
MK64FN1M0VDC12

PTB0 G11
PTB1 G10
PTB2 G9
PTB3 G8

PTB16 B10   UART0_RX
PTB17 E9   UART0_TX
PTD15 E1   PTD15
PTE6   F3   PTE6
PTB20 F10   SPI2_PCS0
PTB21 F9   SPI2_SCK
PTB22 F8   SPI2_MOSI
PTB23 E8   MKW40_RST

ADC1_SE12 F11
PTC14 A5
PTC12 B6
PTB9 E10
PTD1 D3
PTA29 H11
PTC13 A6
PTB12 B11

U1C
MK64FN1M0VDC12

PTC0 B9
PTD0 A7
PTC8 C8
PTC9 B8
PTC13 A8

PTB8 D11   PTB8
PTC16 D5   UART3_RX
PTC17 C4   UART3_TX
PTB10 D10   PTB10
PTC19 A4   USB_VBUS

PTC5 C7
PTC6 C7
PTC7 B7
PTD0 D4
PTC9 D6
PTC10 C6
PTC11 C5
PTB11 C10
PTB13 C11
PTB19 C9

U1D
MK64FN1M0VDC12

PTC1   D8
PTC18 B4
UART2_RX C3
UART2_TX B3
SPI1_PCS0 A3
SPI1_SCK A2
SPI1_MOSI B2
SPI1_MISO A1

PTC1   PTD10 B1   PTD10
PTC18
PTD2
PTD3
PTD4
PTD5
PTD6
PTD7
PTD8
PTD9
PTC15
PTD12
PTD11
PTD14
PTD13

I2C0_SCL_B A10
I2C0_SDA_B A9
PTC15 B5
PTD12 C1
PTD11 C2
PTD14 D1
PTD13 D2

U1E
MK64FN1M0VDC12

USER_SD_D1 E4
USER_SD_D0 E3
USER_SD_CLK E2
USER_SD_CMD F4
USER_SD_D3 H7
USER_SD_D2 G4
PTB18 D9

PTE0
PTE1 E
PTE2
PTE3
PTE4
PTE5
PTB18

PTE24 H5 UART4_TX
PTE25 J5 UART4_RX
PTE26 H6 PTE26

U1F
MK64FN1M0VDC12

VDD   E7
VDD   E6
VDD   E5
VDD   L10
VDDA F5
VBAT K6
VREFH G5

GND   F7
GND   L6
GND   G3
GND   K10
GND   F6
GNDA

VREFL G6
VREF_OUT
RESET
VREGIN G2
VOUT33 G1

XTAL32 L3
EXTAL32 L4
XTAL0 K11
EXTAL0 L11

NC H4
NC K3
NC A11

VCC-MCU
VCC-BAT
VCC-USB
VCC-3V3

C11 100nF
C1 100nF
X1 32.768kHz
Y1 12MHz
C5 12pF
C7 12pF
C4 100nF
C6 2.2uF

MK64_RST
R7 10K

U1G
MK64FN1M0VDC12

ADC0_DP0 K1
ADC0_DM0 K2
ADC0_DP1 H1
ADC0_DM1 H2
ADC1_DP0 L1
ADC1_DM0 L2
ADC1_DP1 J1
ADC1_DM1 J2

ADC0_SE16 H3 BAT_SENS
ADC1_SE16
DAC0_OUT K5
DAC1_OUT K4

USB0_DP F1 USB_DP
USB0_DM F2 USB_DN

Flash
Flash.SchDoc

SPI1_PCS0 — Flash_CS
SPI1_SCK — Flash_SCK
SPI1_MOSI — Flash_SDI
SPI1_MISO — Flash_SDO

MKW40Z
BLE.SchDoc

BAT_SENS — BLE_ADC
PTE26 — BLE_PB18
MKW40_RST — BLE_RST
SWDCLK — BLE_SWDCLK
MKW40_SWDIO — BLE_SWDIO
UART4_RX — BLE_UART_TX
UART4_TX — BLE_UART_RX
SPI1_PCS0 — BLE_SPI1_PCS0
SPI1_SCK — BLE_SPI1_SCK
SPI1_MISO — BLE_SPI1_MISO
SPI1_MOSI — BLE_SPI1_MOSI
PTD14 — BLE_WKP

OLED
OLED.SchDoc

PTD15 — OLED_D/C
PTE6 — OLED_RST
SPI2_PCS0 — OLED_CS
SPI2_SCK — OLED_SPI_SCLK
SPI2_MOSI — OLED_SPI_SDI

FM1 FIDUCIAL MARK
FM2 FIDUCIAL MARK
FM3 FIDUCIAL MARK
FM4 FIDUCIAL MARK
FM5 FIDUCIAL MARK
FM6 FIDUCIAL MARK

ExtConn
ExtConn.SchDoc

SPI0_PCS0 — MB1_CS
ADC0_SE12 — MB1_AN
PTB11 — MB1_RST
PTA10 — MB1_PWM
PTB13 — MB1_INT

SPI0_PCS1 — MB2_CS
ADC0_SE13 — MB2_AN
PTB19 — MB2_RST
PTA11 — MB2_PWM
PTB8 — MB2_INT

SPI0_PCS2 — MB3_CS
ADC1_SE12 — MB3_AN
PTB10 — MB3_RST
PTA4 — MB3_PWM
PTB7 — MB3_INT

SPI0_SCK — MB_SPI_SCK
SPI0_MOSI — MB_SPI_MOSI
SPI0_MISO — MB_SPI_MISO

UART1_TX — UART1_TX
UART1_RX — UART1_RX
UART2_TX — UART2_TX
UART2_RX — UART2_RX
UART3_TX — UART3_TX
UART3_RX — UART3_RX

I2C0_SCL_B — I2C1_SCL
I2C0_SDA_B — I2C1_SDA

USER_SD_CLK — SDHC_CLK
USER_SD_CMD — SDHC_CMD
USER_SD_D0 — SDHC_DAT0
USER_SD_D1 — SDHC_DAT1
USER_SD_D2 — SDHC_DAT2
USER_SD_D3 — SDHC_DAT3

I2S0_MCLK — I2S_MCLK
I2S0_RX_BCLK — I2S_RX_BCLK
I2S0_RX_FS — I2S_RX_FS
I2S0_RXD0 — I2S_RXD
I2S0_TX_BCLK — I2S_TX_BCLK
I2S0_TX_FS — I2S_TX_FS
I2S0_TXD0 — I2S_TXD

SWDCLK — SWDCLK
MK64_SWDIO — MK64_SWDIO
MK64_RST — MK64_RST
MKW40_SWDIO — MKW40_SWDIO
MKW40_RST — MKW40_RST

USB_DP — USB_DP
USB_DN — USB_DN
USB_VBUS — USB_VBUS
BAT_SW — BAT_SW

R4 10K R5 10K
R8 10K
R9 4K7 R10 4K7
R2 4K7 R3 4K7
R62 27 R63 27
R66 27 R67 27
R55 0
FP4 FERRITE

C65 10uF C13 1uF C12 100nF C10 100nF C14 1uF

VCC-3V3B

C30
100nF

VCC-3V3B

U9

4	NC	NC	3
5	VDD	GND	2
6	SCK	SDA	1

HTU21D

Humidity_SCL

Humidity_SDA

VCC-5VEXT

R45 100K

D2
PMEG3010ER

D3
PMEG3010ER

VCC-USB

VCC-CH

R1
100K

D1
PMEG3010ER

VCC

VCC-BAT

M1
DMP2160UW

U15
3 IN GND 2
4 EN OUT 1
SIP32431DNP3-T1GE4

R36
1M

BAT_SW

C3
100pF

BTN1

U10
SC195
1 CTRL2 CTRL3 8
2 CTRL1 IN 7
3 CTRL0 LX 6
OUT GND 5

VCC

C50
10uF

VCC-3V3

L3
1uH

C51   C52   C53
100nF   1uF   10uF

VCC

L2 10uH

U11
1 OUT   PGND 8
2 VIN   SW 7
3 EN   FB 6
4 AGND NC 5
MIC2290

VCC-15V

BOOST_EN

Logic ONE -
Enabled
Logic ZERO -
Disabled
(OLED VCC
PWR Supply)

R38
1M

C48
10uF

C49
2.2uF

R37
54K9

R39
5K

VCC-BAT

R40
1M

VCC-BAT   VCC-BAT

M2
DMP21D0UFB4

CN3
BATT CONN
+
-

BAT_SENS_EN

R41
1K

HI Z - Disabled
Logic ZERO - Enabled

BAT_SENS

R42
100K

C56
100nF

R43
200K

LDO_EN

U12
5 CTRL NC
GND
VIN VOUT
TCR2EE18

VCC-3V3

VCC-1V8

Logic ONE -
Enabled
Logic ZERO -
Disabled
(Heart-Rate PWR
Supply)

C54
100nF

C55
1uF

VCC

L4 10uH

U16
1 SW   VIN 6
2 GND VOUT 5
3 FB   SHDN 4
AAT1217

VCC-HRM

R71
1M02

C72
2.2uF

LDO_EN

C71
2.2uF

R72
332K

VCC-3V3   VCC-CH

R47
100K

U13
1 VIN   BAT 8
2 PPR   ISET 7
3 CHG   FAST 6
4 EN   GND 5
MC34671

VCC-BAT

CHG_STATE

C58
1uF

R48
16K9

C59
2.2uF

VCC-3V3

M3
DMP21D0UFB4

VCC-3V3B

R44
1M

R46
1K

C57
1uF

3V3B_EN

HI Z - Disabled
Logic ZERO - Enabled
(Hum&Temp and
AmbiLight sensors PWR
Supply)

VCC-3V3　　　VCC-3V3

U14

1		8	Pressure_SCL
2		7	Pressure_SDA
3		6	Pressure_INT1
4		5	Pressure_INT2

MPL3115A2

C8　　C60　　C6　　C62
100nF　100nF　10uF　100nF

VCC-3V3

VCC-3V3

C63
4.7uF

LD1

R49
620

R50
220

R51
280

RGB_R

RGB_G

RGB_B

VCC-3V3

C64
10uF

VCC-3V3

M4 PICO VIBE

D5

M5
DMG3420U

VIBRO

R52
100

R53
100K