S1
S2 PCB SHEILD TOP
PCB SHEILD FRAME
GND
S3
S4 PCB SHEILD TOP
PCB SHEILD FRAME
GND

J3
VCC
D-
D+
ID
GND
CASE CASE CASE CASE CASE CASE
10104111-0001LF
Power
VCCUSB50
OTG_FS_D_N
OTG_FS_D_P
USB_ID
GND

VCCUSB50
U2
VIN LX
EN
GND FB
AP3429AKTTR-G1
L1
2.2uH 1.3A 156mOhm
C3 22uF, 6.3V
C4 22pF, 50V
Rset1 402k
Rset2 100K
C9 22uF 6.3V
C10 22uF, 6.3V
VCC30_IO
FB = 0.6V
GND

max current =310mA
1/(1.0*10^6 *2.2*10^-6)*3(1-3/5)=54% ripple
Max current for indcuctor = 465mA

I = 0.6/R2
V = I * (R2+R1)
3 = 0.6/R2*(R2+R1)
R2 = 0.25R1

VCC30_IO
U4
IN OUT
LDO_ON EN GND NC
FT533GA 2.8V
C16 1uF, 16V
C17 1uF, 16V
VCC28A
GND

VCCUSB50
U5
VIN SW
BUCK_ON EN
GND FB
PAM2305AAB120
L2
2.2uH 1.3A 156mOhm
C18 10uF, 6.3V
C19 10uF, 6.3V
VCC12
GND

max current = 110mA
1/(1.5*10^6 *2.2*10^-6)*1.2(1-1.2/5)=27% ripple
Max current for indcuctor = 140

VCC30_IO
C6 0.1uF, 16V
VCC12
VCC28A
C7 0.1uF, 16V
C5 0.1uF, 16V
1050281001
U1
VDDC VDDIO VDD
SPI_MOSI
SPI_MISO
SPI_CLK
SPI_CS_L
GPIO3
GPIO2
GPIO1
GPIO0
PW_DWN_L
RESET_L
MASTER_CLK
MIPI_CLK_N
MIPI_CLK_P
MIPI_DATA_N
MIPI_DATA_P
SCL
SDA
SHEILD
SPI_MOSI 11
SPI_MISO 12
SPI_CLK 13
SPI_CS 14
LEPTON_GPIO3 2
GPIO2 3
GPIO1 4
GPIO0 5
23 LEPTON_PW_DWN_L
24 LEPTON_RESET_L
26 MASTER_CLK
28 MIPI_CLK_N
29 MIPI_CLK_P
31 MIPI_DATA_N
32 MIPI_DATA_P
21 SCL
22 SDA
33
R3 100K
R20 10k
12mS Delay
C11 1u, 16V
GND

VCC30_IO
C8 0.1uF, 16V
R5 100K
CLK_STBY
Y1
VDD OUT
STBY GND
ASEMB-25.000MHZ-LC
25MHz, 50ppm
R1 0
MASTER_CLK
GND

STM32_nRESET
SW2
MOM PB
BOOT0
SW1
KXT 331 LHS MOM PB
VCC30_IO
GND

VCC30_IO
C12 0.1uF, 16V
C13 0.1uF, 16V
C14 0.1uF, 16V
C15 0.1uF, 16V
C30 1u, 16V
C34 2.2uF 10V
GND

VCC30_IO
Y2
VCC OUT
OE GND
DSC6111CI1A-008.0000
C1 0.1uF, 16V
C20 0.1uF, 16V
USB_CLK
GND

U3
STM32F412CGU6
NRST
PC13/ANTI_TAMP
PC14-OSC32_IN
PC15-OSC32_OUT
PH0-OSC_IN
PH1-OSC_OUT
BOOT0
PA0/USART2_CTS/WKUP
PA1/USART2_RTS
PA2/USART2_TX
PA3/USART2_RX
PA4/ADC4
PA5/ADC5
PA7/ADC7
PA10/USB_ID
PA11/USB_DM
PA12/USB_DP
PA6/SDIO_CMD
PB7/SDIO_D0
PA8/SDIO_D1
PA9/SDIO_D2
PB5/SDIO_D3
PB15/SDIO_CK/SPI2_MOSI
VDD VDD VDD VBAT VCAP1
VSS VSS VSS PAD
VDDA/VREF+
VSSA/VREF-
PA13/TMS/SWDIO
PA14/TCK/SWCLK
PA15/TDI
PB3/SWO
PB4/JRST
PB0/TIM3_CH3
PB1/TIM3_CH4
PB2/BOOT1
PB6/TIM4_CH1
PB8/I2C1_SCL
PB9/I2C1_SDA
PB10/TIM2_CH3
PB12/SPI2_CS
PB13/SPI2_SCK
PB14/SPI2_MISO
STM32_nRESET 7
LEPTON_GPIO3 2
PC14 3
PC15 4
BOOT0 44
ESP_GPIO2 10
ESP_GPIO0 11
PA2_USART2_TX 12
PA3_USART2_RX 13
PB_STAT 14
ESP_CH_PD 15
ESP_RST 17
USB_ID 31
OTG_FS_D_N 32
OTG_FS_D_P 33
SYSTEM_LED 16
LDO_ON 43
LEPTON_PW_DWN_L 29
LEPTON_RESET_L 30
BUCK_ON 41
SPI_MOSI 28
TMS-SWDIO 34
TCK-SWCLK 37
TDI 38
TDO 39
CLK_STBY 40
TIM3_CH3 18
TIM3_CH4 19
BOOT1 20
TIM4_CH1 42
SCL 45
SDA 46
TIM2_CH3 21
SPI_CS 25
SPI_CLK 26
SPI_MISO 27
R9 1 Ohm, 1%
C31 0.1uF, 16V
R6 10k
R8 10k
GND

VCC30_IO
D3
SMLP13WBC8W1
R21 2.2K
GND

PCB2
VCC30_IO
TMS-SWDIO
STM32_nRESET
TCK-SWCLK
TDO
VCC
SWDIO/TMS
RESET
SWCLK/TCK
GND
SWO/TDO
TC2030
GND

VCCUSB50 VCC30_IO
J2
PA2_USART2_TX
PA3_USART2_RX
SCL
SDA
GND

H1
VIN
D1
VCCUSB50

H2 2-56 MOUNTING HOLE
H3 2-56 MOUNTING HOLE
H4 2-56 MOUNTING HOLE
GND

TP2 VCC28A
TP6 VCC30_IO
TP10 VCC12
TP13 GND
TP3 SPI_MOSI
TP7 SPI_MISO
TP11 SPI_CLK
TP14 SPI_CS
TP8 MASTER_CLK
TP1 LEPTON_PW_DWN_L
TP5 LEPTON_RESET_L
TP9 LDO_ON
TP12 BUCK_ON
TP15 BOOT0
TP16 BOOT1

VCC30_IO
R4 100K
BUCK_ON
R19 2.2K
SCL
R7 100K
LDO_ON
R2 2.2K
SDA

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