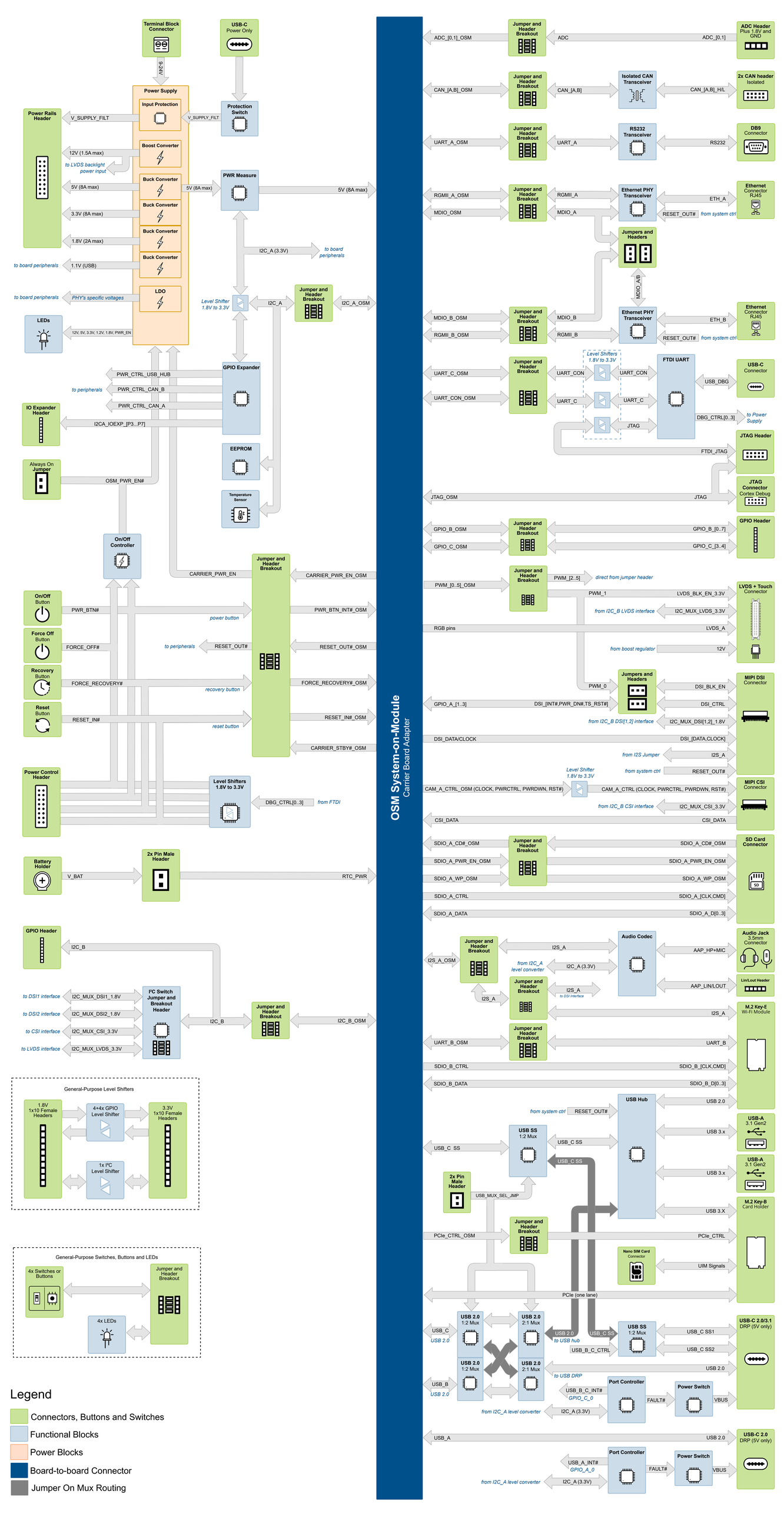
OSM System-on-Module
Carrier Board Adapter
Terminal Block Connector
9-24V
USB-C Power Only
Power Supply
Input Protection
Boost Converter
Buck Converter
Buck Converter
Buck Converter
Buck Converter
LDO
Protection Switch
V_SUPPLY_FILT
Power Rails Header
12V (1.5A max)
to LVDS backlight power input
5V (8A max)
3.3V (8A max)
1.8V (2A max)
1.1V (USB)
to board peripherals
PHY's specific voltages
LEDs
12V, 5V, 3.3V, 1.2V, 1.8V, PWR_EN
PWR Measure
5V (8A max)
I2C_A (3.3V)
to board peripherals
Level Shifter 1.8V to 3.3V
I2C_A
Jumper and Header Breakout
I2C_A_OSM
GPIO Expander
PWR_CTRL_USB_HUB
PWR_CTRL_CAN_B
PWR_CTRL_CAN_A
to peripherals
I2CA_IOEXP_[P3...P7]
IO Expander Header
EEPROM
Temperature Sensor
Always On Jumper
OSM_PWR_EN#
On/Off Controller
CARRIER_PWR_EN
CARRIER_PWR_EN_OSM
On/Off Button
PWR_BTN#
power button
PWR_BTN_INT#_OSM
Force Off Button
FORCE_OFF#
to peripherals
RESET_OUT#
RESET_OUT#_OSM
Recovery Button
FORCE_RECOVERY#
recovery button
FORCE_RECOVERY#_OSM
Reset Button
RESET_IN#
reset button
RESET_IN#_OSM
CARRIER_STBY#_OSM
Power Control Header
Level Shifters 1.8V to 3.3V
DBG_CTRL[0..3]
from FTDI
Battery Holder
V_BAT
2x Pin Male Header
RTC_PWR
GPIO Header
I2C_B
to DSI1 interface
to DSI2 interface
to CSI interface
to LVDS interface
I2C_MUX_DSI1_1.8V
I2C_MUX_DSI2_1.8V
I2C_MUX_CSI_3.3V
I2C_MUX_LVDS_3.3V
I²C Switch Jumper and Breakout Header
I2C_B
Jumper and Header Breakout
I2C_B_OSM
General-Purpose Level Shifters
1.8V 1x10 Female Headers
4+4x GPIO Level Shifter
1x I²C Level Shifter
3.3V 1x10 Female Headers
General-Purpose Switches, Buttons and LEDs
4x Switches or Buttons
4x LEDs
Jumper and Header Breakout
ADC_[0,1]_OSM
Jumper and Header Breakout
ADC
ADC_[0,1]
ADC Header
Plus 1.8V and GND
CAN_[A,B]_OSM
Jumper and Header Breakout
CAN_[A,B]
Isolated CAN Transceiver
CAN_[A,B]_H/L
2x CAN header
Isolated
UART_A_OSM
Jumper and Header Breakout
UART_A
RS232 Transceiver
RS232
DB9
Connector
RGMII_A_OSM
MDIO_OSM
Jumper and Header Breakout
RGMII_A
MDIO_A
Ethernet PHY Transceiver
ETH_A
RESET_OUT#
from system ctrl
Ethernet
Connector
RJ45
Jumpers and Headers
MDIO_AB
MDIO_B_OSM
RGMII_B_OSM
Jumper and Header Breakout
MDIO_B
RGMII_B
Ethernet PHY Transceiver
ETH_B
RESET_OUT#
from system ctrl
Ethernet
Connector
RJ45
UART_C_OSM
UART_CON_OSM
Jumper and Header Breakout
Level Shifters 1.8V to 3.3V
UART_CON
UART_C
JTAG
FTDI UART
USB_DBG
DBG_CTRL[0..3]
to Power Supply
USB-C
Connector
FTDI_JTAG
JTAG Header
JTAG_OSM
JTAG
JTAG Connector
Cortex Debug
GPIO_B_OSM
GPIO_C_OSM
Jumper and Header Breakout
GPIO_B_[0..7]
GPIO_C_[3..4]
GPIO Header
PWM_[0..5]_OSM
Jumper and Header Breakout
PWM_[2..5]
direct from jumper header
PWM_1
from I2C_B LVDS interface
LVDS_BLK_EN_3.3V
I2C_MUX_LVDS_3.3V
RGB pins
LVDS_A
from boost regulator
12V
LVDS + Touch
Connector
PWM_0
GPIO_A_[1..3]
Jumpers and Headers
DSI_BLK_EN
DSI_CTRL
DSI_[INT#,PWR_DN#,TS_RST#]
from I2C_B DSI[1,2] interface
I2C_MUX_DSI[1,2]_1.8V
DSI_DATA/CLOCK
DSI_[DATA,CLOCK]
from I2S Jumper
I2S_A
from system ctrl
RESET_OUT#
MIPI DSI
Connector
Level Shifter 1.8V to 3.3V
CAM_A_CTRL_OSM (CLOCK, PWRCTRL, PWRDWN, RST#)
CAM_A_CTRL (CLOCK, PWRCTRL, PWRDWN, RST#)
from I2C_B CSI interface
I2C_MUX_CSI_3.3V
CSI_DATA
CSI_DATA
MIPI CSI
Connector
SDIO_A_CD#_OSM
SDIO_A_PWR_EN_OSM
SDIO_A_WP_OSM
Jumper and Header Breakout
SDIO_A_CD#_OSM
SDIO_A_PWR_EN_OSM
SDIO_A_WP_OSM
SDIO_A_CTRL
SDIO_A_[CLK,CMD]
SDIO_A_DATA
SDIO_A_D[0..3]
SD Card Connector
I2S_A_OSM
Jumper and Header Breakout
I2S_A
from I2C_A level converter
I2C_A (3.3V)
Audio Codec
AAP_HP+MIC
AAP_LIN/LOUT
Audio Jack
3.5mm
Connector
Lin/Lout Header
I2S_A
Jumper and Header Breakout
I2S_A
to DSI interface
I2S_A
M.2 Key-E
Wi-Fi Module
UART_B_OSM
Jumper and Header Breakout
UART_B
SDIO_B_CTRL
SDIO_B_[CLK,CMD]
SDIO_B_DATA
SDIO_B_D[0..3]
USB Hub
USB 2.0
from system ctrl
RESET_OUT#
USB-A
3.1 Gen2
USB SS
1:2 Mux
USB_C SS
USB_C SS
USB 3.x
USB_C SS
USB-A
3.1 Gen2
USB 3.x
2x Pin Male Header
USB_MUX_SEL_JMP
USB 3.X
M.2 Key-B
Card Holder
PCIe_CTRL_OSM
Jumper and Header Breakout
PCIe_CTRL
Nano SIM Card Connector
UIM Signals
PCIe (one lane)
USB_C
USB 2.0
USB 2.0
1:2 Mux
USB 2.0
2:1 Mux
USB 2.0
to USB hub
USB_C SS
USB SS
1:2 Mux
USB_C SS1
USB_C SS2
USB_B_C_CTRL
USB-C 2.0/3.1
DRP (5V only)
USB_B
USB 2.0
USB 2.0
1:2 Mux
USB 2.0
2:1 Mux
USB 2.0
to USB DRP
Port Controller
Power Switch
USB_B_C_INT#
GPIO_C_0
FAULT#
VBUS
from I2C_A level converter
I2C_A (3.3V)
USB_A
USB 2.0
USB-C 2.0
DRP (5V only)
Port Controller
Power Switch
USB_A_INT#
GPIO_A_0
FAULT#
VBUS
from I2C_A level converter
I2C_A (3.3V)
Legend
Connectors, Buttons and Switches
Functional Blocks
Power Blocks
Board-to-board Connector
Jumper On Mux Routing