Rosebud Software Architecture

Version 1.0

Rosebud Multithreaded Application

Main Control Thread

Visual Camera Thread

Apple Device Thread

Lepton Thread

Battery Charging Thread

Buildroot Utilities

usblib

Userland

Linux 2.6.39 Kernel

Video4Linux2 Module

Lepton Module

Atmel I2C Module

GPIO Module

Kernel Layer

Atmel OHCI & EHCI USB Host Controller

Atmel SPI Module

Atmel AT91SAMX25 System On a Chip

DMA

ARM-9 CPU

NAND Controller

DDR Controller

HS USB Host

HS USB Device

SPI

I2C

GPIO

Hardware

DDR/NAND Chip

Sonix MJPEG Encoder

Lightning Connector

Lepton

Apple Authentication Chip

Temp Sensor

Switches & LEDs

Battery Charger

Visual Camera

iPhone 5s

iOS App