Imx586驱动：

1. 驱动架构参照nvidia imx185sensor架构
2. 寄存器配置参照sony fae发的列表配置
3. 驱动文件路径：

Tegra186\_Linux\_R32.6.1\Linux\_for\_Tegra\_imx586\source\public\kernel\nvidia\drivers\media\i2c

Sensor配置tegra194-camera-bs-imx586-dual.dtsi设备树文件路径：

Tegra186\_Linux\_R32.6.1\Linux\_for\_Tegra\_imx586\source\public\hardware\nvidia\platform\t19x\common\kernel-dts\t19x-common-modules

Power相关设备树tegra194-camera-jakku-bs-imx586-dual.dtsi文件路径

Z:\linux\Tegra186\_Linux\_R32.6.1\Linux\_for\_Tegra\_imx586\source\public\hardware\nvidia\platform\t19x\jakku\kernel-dts\common

1. 驱动修改：
2. 修改驱动文件目录里的kconfig文件，添加：

config VIDEO\_IMX586

tristate "IMX586 camera sensor support"

depends on I2C && VIDEO\_V4L2 && VIDEO\_V4L2\_SUBDEV\_API

---help---

This driver supports IMX586 camera sensor from Sony

To compile this driver as a module, choose M here: the module

will be called imx586.

1. 修改驱动文件目录里的Makefile文件，添加:

obj-$(CONFIG\_VIDEO\_IMX586) += imx586.o

1. 添加设备树文件:

在tegra194-p3509-0000-a00.dtsi里添加如下

#include "tegra194-camera-jakku-bs-imx586-dual.dtsi"

1. Dtsi部分文件介绍

tegra194-camera-jakku-bs-imx586-dual.dtsi文件主要是配置sensor时钟和部分pin脚电源。tegra194-camera-bs-imx586-dual.dtsi只要是配置imx586 vi接口和各个模式的参数配置。

tegra194-camera-bs-imx586-dual.dtsi有个mode部分介绍：

mclk\_khz = "24000"; //sensor 时钟为24M

num\_lanes = "4"; //使用4lane模式

tegra\_sinterface = "serial\_a"; //sensor 的硬件接口为csi01

active\_w = "8000";

active\_h = "6000";

line\_length = "14704"; //line长，具体见sony文档

mclk\_multiplier = "1042"; //内部时钟倍频

pix\_clk\_hz = "1718400000"; //sensor pixel clock

1. Frame rate和pix clk计算公式：

Frame Rate [frame/s] = Pixel\_rate [pixels/s] / Total number of pixels [pixels/frame]

Pixel rate [pixels/s] = IVTPXCK [MHz] \* 8 (Total number of IVTPX channel)

Total number of pixels [pixels/frame] = FRM\_LENGTH\_LINES [lines/frame] \* LINE\_LENGTH\_PCK [pixels/line]

IVTPXCK clock frequency = IVTCK x IVTPXCK clock division ratio

IVTPXCK clock division ratio = 1 / (IVT\_SYCK\_DIV \* IVT\_PXCK\_DIV)

IOPSYCK clock frequency = IOPCK x IOPSYCK clock division ratio

IOPSYCK clock division ratio = 1 / (IOP\_SYCK\_DIV)

pixel\_clk = Pixel\_rate

1. Imx586驱动：
2. imx586\_set\_gain(): 设置模拟gain值，具体参数见sesor文档，注意的是每个分辨率gain的范围不一样。
3. imx586\_set\_exposure(): 设置曝光时间

曝光时间分普通模式和hdr模式，两种模式的设置不一样。Hdr模式要注意长曝光。

曝光时间主要是设置COARSE\_INTEG\_TIME寄存器来调节

1. imx586\_set\_mode(): 设置模式，主要就是设置各模式的寄存器值。