

1、 Source code directory structure

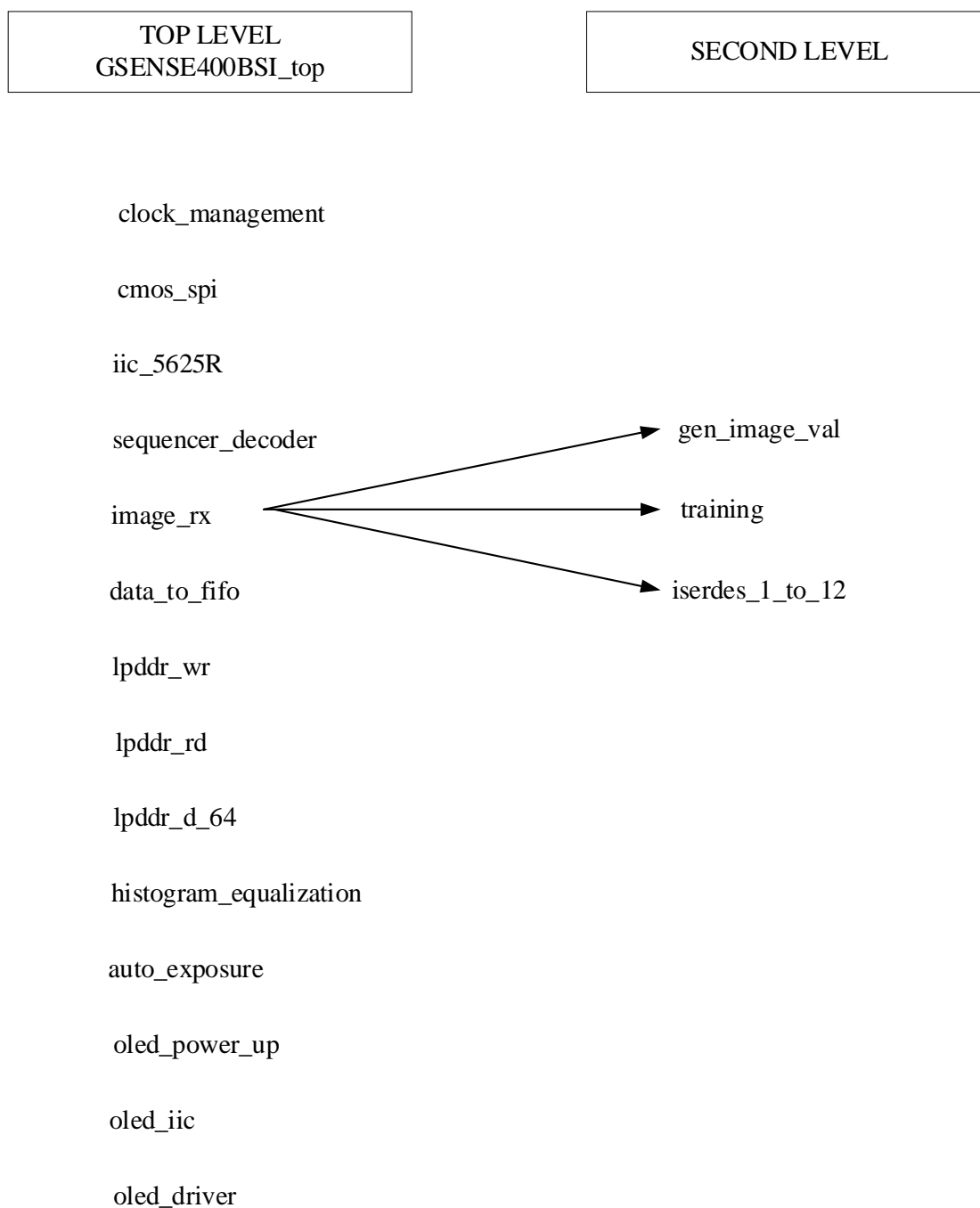


Fig.1 Source code module hierarchy

Figure 1 shows the source code module hierarchy. The entire top-level module is divided into 14 sub-modules, which are **clock_management**, **cmos_spi**, **iic_5625R**, **sequencer_decoder**, **image_rx**, **data_to_fifo**, **lpddr_wr**, **lpddr_rd**, **lpddr_d_64**, **histogram_equalization**, **auto_exposure**, **oled_power_up**, **oled_iic** and **oled_driver**. Each module function is described below.

clock_management: Complete each module clock management

cmos_spi: Complete CMOS image sensor SPI configuration for configuring sensor

operating mode, PGA, etc.

iic_5625: Power-on timing of the sensor through the IIC configuration AD5625

sequencer_decoder: Control sensor on-chip AD decoding and exposure time

image_rx: Decode and train received digital images

gen_image_val: Generate image sync signal

training: Image training module, including bit training, word training and channel training

iserdes_1_to_12: 1-12 serial to parallel conversion module

data_to_fifo: Complete image stitching

lpddr_wr: LPDDR write buffer

lpddr_rd: LPDDR read buffer

lpddr_d_64: MIG core provided by xilinx

auto_exposure: Automatic exposure control based on luminance mean and histogram distribution

histogram_equalization: Implementation of adaptive platform histogram equalization algorithm

oled_power_up: Complete OLED power-on sequencing

oled_iic: Complete OLED register configuration

oled_driver: Complete OLED drive timing

2、 Compiler version

ISE 14.7

3、 How to start the work

Power-on self-starting through a FLASH of S25FL256SAGNFI001