

416x416變數宣告

```

35
36 typedef struct ImgS
37 {
38     int w;
39     int h;
40     int c;
41     uchar *data;
42 }ImgS;
43
44 //The first saved frame
45 uchar FstFrame[TBSIZE] = {0};
46 uchar chn1[CHNLSIZE] = {0}; //??B
47 uchar chn2[CHNLSIZE] = {0}; //??G
48 uchar chn3[CHNLSIZE] = {0}; //??R
49
50 //Jackol define
51 uchar DwnCh1[DWNSIZE] = {0}; //??B
52 uchar DwnCh2[DWNSIZE] = {0}; //??G
53 uchar DwnCh3[DWNSIZE] = {0}; //??R
54
55 uchar Padding1[PADDSIZE] = {0}; //??B
56 uchar Padding2[PADDSIZE] = {0}; //??G
57 uchar Padding3[PADDSIZE] = {0}; //??R
58 //CY add for verify AXI DMA function
59 uchar Padding1_RX[PADDSIZE] = {0}; //??B
60 uchar Padding2_RX[PADDSIZE] = {0}; //??G
61 uchar Padding3_RX[PADDSIZE] = {0}; //??R

```

- PADDSIZE=173056 (416*416)
- Downsize影像變數
 - Padding1、Padding2、Padding3
- IP運算完之變數
 - Padding1_RX、Padding2_RX、Padding3_RX

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DCache刷新副程式

- void Xil_DCacheFlushRange(INTPTR adr, INTPTR len)
- 使用範例：

```

systemmss xaxidmac xmpi_examplec axi_dmac drawh systemhdt
Xil_DCacheFlushRange((UINTPTR)(&Padding1), PADDSIZE);
Xil_DCacheFlushRange((UINTPTR)(&Padding1_RX), PADDSIZE);
Xil_DCacheFlushRange((UINTPTR)(&Padding2), PADDSIZE);
Xil_DCacheFlushRange((UINTPTR)(&Padding2_RX), PADDSIZE);
Xil_DCacheFlushRange((UINTPTR)(&Padding3), PADDSIZE);
Xil_DCacheFlushRange((UINTPTR)(&Padding3_RX), PADDSIZE);

//start Padding to IP,CYCHEN add=====
AXI_DMA_Transfer(&Padding1, PADDSIZE, XAXIDMA_DMA_TO_DEVICE);
AXI_DMA_Transfer(&Padding1_RX, PADDSIZE, XAXIDMA_DEVICE_TO_DMA);
Xil_DCacheFlushRange((UINTPTR)Padding1, PADDSIZE);
Xil_DCacheFlushRange((UINTPTR)Padding1_RX, PADDSIZE);

```

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AXI DMA傳輸副程式

- void AXI_DMA_Transfer(UINTPTR BuffAddr, u32 Length , int Direction)
- Direction參數說明：
 - DDR到IP：XAXIDMA_DMA_TO_DEVICE
 - IP到DDR：XAXIDMA_DEVICE_TO_DMA
 - PADDSIZE：資料長度 (Byte)
- 使用範例：

```

AXI_DMA_Transfer((UINTPTR)(&Padding1), PADDSIZE, XAXIDMA_DMA_TO_DEVICE);
AXI_DMA_Transfer((UINTPTR)(&Padding1_RX), PADDSIZE, XAXIDMA_DEVICE_TO_DMA);
Xil_DCacheFlushRange((UINTPTR)Padding1, PADDSIZE);
Xil_DCacheFlushRange((UINTPTR)Padding1_RX, PADDSIZE);

```

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AXI DMA/IP 驗證

```

xmpi_examplec axi_dmac drawh asm_vectors.S xaxidmac xaxidmah
#define TEST_SIZE 256

void AXI_DMA_IP_TEST(void)
{
    u8 Source_TX[256] = {0};
    u8 Source_RX[256] = {0};
    //Generate Test pattern
    for (int i=0;i<256;i++)
    {
        Source_TX[i]=i;
    }
    //Start DDR to IP transfer
    AXI_DMA_Transfer((UINTPTR)(&Source_TX), TEST_SIZE, XAXIDMA_DMA_TO_DEVICE);
    //Start IP to DDR transfer
    AXI_DMA_Transfer((UINTPTR)(&Source_RX), TEST_SIZE, XAXIDMA_DEVICE_TO_DMA);
    //Flush DDR
    Xil_DCacheFlushRange((UINTPTR)(&Source_TX), TEST_SIZE);
    Xil_DCacheFlushRange((UINTPTR)(&Source_RX), TEST_SIZE);
    //Verify data
    for (int i=0;i<256;i++)
    {
        if(Source_TX[i]!=Source_RX[i])
        {
            xil_printf("Test failed \r\n");
        }
    }
}

```

測試資料單位為8bit

1.將DDR資料傳送到IP

2.將IP資料傳送到DDR

3.刷新DDR內容

4.比對Source_TX與Source_RX的內容

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