**Tone Equalization**

**1、Algorithm:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Num. | Algorithm | Line of c code | Loops/array variables | Primary data size | description |
| 1 | Tune  Equalization | 5 | 240000/2 | 600*×*400 | Image tone equalization |

**2、Source Code Kernel:**

int image[600][400] = {…};

int tone[256] = {0,0,0…};

for(int i=0; i<600; i++)

for(int j=0; j<400; j++)

tone[image[i,j]] = tone[image[i,j]]+1;

Running on a Core2 Duo @2.00GHz : Running time ---- 0.006000 seconds

**3、Context description:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Context  Index | Route Context Num | Data Context Num | Loops/array variables | Using Data Context  Jump Modular | Using VGRF Context  Jump Modular | Primary data size | description |
| Context 0 | 1 | 1 | 240000/2 | Yes | Yes | 600*×*400 | tone value statistics |
| Context 1 | 1 | 4 | 16/1 | Yes | No | 256 | Output statistical data |

**4、Context running information:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Context  Index | Loop unrolling  (loops) | Num of PE used | The max number of Concurrently executed PEs | Simulation Start Time | Simulation End Time | Total time | Speedup |
| Context 0 | Yes(2) | 240000 | 16 | 23 | 1,188,773 | 1,189,724 | 5.04318 |
| Context 1 | Yes(1) | 256 | 16 | 1,188773 | 1190063 |

Array Cycle Time : 1ns.

Condition:

The last column in above table shows the speedup obtained with XPP at 150MHz implementations (using the total execution time) over the examples compiled with gcc and running on a PIII at 933MHz

Footnote：