Clover自带的gma.c查找显卡参数。

**sandy bridge平台**

| **显卡型号** | **platform-id** | **机型** | **接口** | **LVDS** | **DP** | **HDMI** |
| --- | --- | --- | --- | --- | --- | --- |
| Intel HD Graphics 3000 | 0x00010000 | MacBookPro8,1 | 4 | 1 | 3 |  |
| Intel HD Graphics 3000 | 0x00020000 | MacBookPro8,3 | 3 | 1 | 2 |  |
| Intel HD Graphics 3000 | 0x00030010 | Macmini5,1 | 3 |  | 2 | 1 |
| Intel HD Graphics 3000 | 0x00030020 | Macmini5,2 | 4 |  | 3 | 1 |
| Intel HD Graphics 3000 | 0x00040000 | MacBookAir4,1 | 3 | 1 | 2 |  |

UINT8 sandy\_bridge\_hd\_vals[13][4] = {

{ 0x04, 0x00, 0x00, 0x00 }, //0 "graphic-options"

{ 0x00, 0x00, 0x00, 0x00 }, //1 "AAPL00,DataJustify"

{ 0x00, 0x00, 0x00, 0x00 }, //2 "AAPL00,Dither"

{ 0x00, 0x00, 0x00, 0x00 }, //3 "AAPL00,LinkFormat"

{ 0x00, 0x00, 0x00, 0x00 }, //4 "AAPL00,LinkType"

{ 0x00, 0x00, 0x00, 0x00 }, //5 "AAPL00,PixelFormat"

{ 0x00, 0x00, 0x00, 0x00 }, //6 "AAPL00,T1"

{ 0x14, 0x00, 0x00, 0x00 }, //7 "AAPL00,T2"

{ 0xfa, 0x00, 0x00, 0x00 }, //8 "AAPL00,T3"

{ 0x2c, 0x01, 0x00, 0x00 }, //9 "AAPL00,T4"

{ 0x00, 0x00, 0x00, 0x00 }, //10 "AAPL00,T5"

{ 0x14, 0x00, 0x00, 0x00 }, //11 "AAPL00,T6"

{ 0xf4, 0x01, 0x00, 0x00 }, //12 "AAPL00,T7"

};

**ivy bridge平台**

| **型号** | **platform-id** | **机型** | **接口** | **LVDS** | **DP** | **HDMI** |
| --- | --- | --- | --- | --- | --- | --- |
| Intel HD Graphics 4000 | 0x01660000 |  | 4 | 1 | 3 |  |
| Intel HD Graphics 4000 | 0x01660001 | MacBookPro10,2 | 4 | 1 | 2 | 1 |
| Intel HD Graphics 4000 | 0x01660002 | MacBookPro10,1 | 1 | 1 |  |  |
| Intel HD Graphics 4000 | 0x01660003 | MacBookPro9,2 | 4 | 1 | 3 |  |
| Intel HD Graphics 4000 | 0x01660004 | MacBookPro9,1 | 1 | 1 |  |  |
| Intel HD Graphics 4000 | 0x01660005 |  | 3 |  | 3 |  |
| Intel HD Graphics 4000 | 0x01660006 | iMac13,1 | 0 |  |  |  |
| Intel HD Graphics 4000 | 0x01660007 | iMac13,2 | 0 |  |  |  |
| Intel HD Graphics 4000 | 0x01660008 | MacBookAir5,1 | 3 | 1 | 2 |  |
| Intel HD Graphics 4000 | 0x01660009 | MacBookAir5,2 | 3 | 1 | 2 |  |
| Intel HD Graphics 4000 | 0x0166000a | Macmini6,1 | 3 |  | 2 | 1 |
| Intel HD Graphics 4000 | 0x0166000b | Macmini6,2 | 3 |  | 2 | 1 |

UINT8 ivy\_bridge\_hd\_vals[1][4] = {

{ 0x0c, 0x00, 0x00, 0x00 }, //0 "graphics-options"

};

**haswell平台**

| **显卡型号** | **platform-id** | **机型** | **接口** | **LVDS** | **DP** | **eDP** | **HDMI** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0x04060000 |  | 3 | 1 |  | 1 | 1 |
|  | 0x0c060000 |  | 3 | 1 |  | 1 | 1 |
| Intel HD Graphics 4600 | 0x04160000 |  | 3 | 1 |  | 1 | 1 |
| Intel HD Graphics 4400 | 0x0a160000 |  | 3 | 1 |  | 1 | 1 |
|  | 0x0c160000 |  | 3 | 1 |  | 1 | 1 |
|  | 0x04260000 |  | 3 | 1 |  | 1 | 1 |
| Intel HD Graphics 5000 | 0x0a260000 |  | 3 | 1 |  | 1 | 1 |
|  | 0x0c260000 |  | 3 | 1 |  | 1 | 1 |
| Intel Iris Pro Graphics 5200 | 0x0d260000 |  | 3 | 1 |  | 1 | 1 |
|  | 0x0d220003 | iMac14,1 iMac14,4 | 3 | 1 | 2 |  |  |
| Intel HD Graphics 4600 | 0x04120004 |  |  |  |  |  |  |
| Intel HD Graphics 5000 | 0x0a260005 |  | 3 | 1 | 2 |  |  |
| Intel HD Graphics 5000 | 0x0a260006 | MacBookAir6,1 MacBookAir6,2 Macmini7,1 | 3 | 1 | 2 |  |  |
| Intel Iris Pro Graphics 5200 | 0x0d260007 | MacBookPro11,2 MacBookPro11,3 | 4 | 1 | 2 |  | 1 |
| Intel Iris Graphics 5100 | 0x0a2e0008 | MacBookPro11,1 | 3 | 1 | 2 |  |  |

UINT8 haswell\_hd\_vals[1][4] = {

{ 0x0c, 0x00, 0x00, 0x00 }, //0 "graphics-options"

};

**broadwell平台**

| **显卡型号** | **platform-id** | **机型** | **接口** | **LVDS** | **DP** | **eDP** | **HDMI** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | 0x16060000 |  | 3 | 1 |  | 1 | 1 |
|  | 0x160e0001 |  | 3 | 1 | 2 |  |  |
| Intel HD Graphics 5500 | 0x16160000 |  | 3 | 1 |  | 1 | 1 |
| Intel HD Graphics 5300 | 0x161e0000 |  | 3 | 1 |  | 1 | 1 |
| Intel Iris Pro Graphics 6200 | 0x16220000 |  | 3 | 1 |  | 1 | 1 |
| Intel HD Graphics 6000 | 0x16260000 |  | 3 | 1 |  | 1 | 1 |
| Intel Iris Graphics 6100 | 0x162b0000 |  | 3 | 1 |  | 1 | 1 |
| Intel HD Graphics 5300 | 0x161e0001 | MacBook8,1 | 3 | 1 | 2 |  |  |
|  | 0x16060002 |  | 3 | 1 | 2 |  |  |
| Intel HD Graphics 5500 | 0x16160002 |  | 3 | 1 | 2 |  |  |
| Intel Iris Pro Graphics 6200 | 0x16220002 |  | 3 | 1 | 2 |  |  |
| Intel HD Graphics 6000 | 0x16260002 |  | 3 | 1 | 2 |  |  |
| Intel Iris Graphics 6100 | 0x162b0002 | MacBookPro12,1 | 3 | 1 | 2 |  |  |
| Intel HD Graphics 5600 | 0x16120003 |  | 3 | 1 | 2 |  |  |
| Intel HD Graphics 6000 | 0x16260004 |  | 3 | 1 | 2 |  |  |
| Intel Iris Graphics 6100 | 0x162b0004 |  | 3 | 1 | 2 |  |  |
| Intel HD Graphics 6000 | 0x16260005 |  | 3 | 1 | 2 |  |  |
| Intel HD Graphics 6000 | 0x16260006 | iMac16,1 MacBookAir7,1 MacBookAir7,2 | 3 | 1 | 2 |  |  |
| Intel Iris Pro Graphics6200 | 0x16220007 | iMac16,2 | 3 | 1 | 2 |  |  |
| Intel HD Graphics 6000 | 0x16200008 |  | 2 | 1 | 1 |  |  |
| Intel Iris Graphics 6100 | 0x162b0008 |  | 3 | 1 | 2 |  |  |

UINT8 broadwell\_hd\_vals[2][4] = {

{ 0x0c, 0x00, 0x00, 0x00 }, //0 "graphics-options"

{ 0x0c, 0x00, 0x00, 0x00 }, //1 "AAPL,ig-tcon-scaler"

};

**skylake平台**

| **显卡型号** | **platform-id** | **机型** | **接口** | **LVDS** | **DP** | **HDMI** |
| --- | --- | --- | --- | --- | --- | --- |
| Intel HD Graphics 530 | 0x19120000 | iMac17,1 | 3 |  | 3 |  |
| Intel HD Graphics 520 | 0x19160000 |  | 3 | 1 | 2 |  |
| Intel Iris Graphics 540 | 0x19260000 |  | 3 | 1 | 2 |  |
| Intel Iris Graphics 550 | 0x19270000 |  | 3 | 1 | 2 |  |
| Intel HD Graphics 530 | 0x191b0000 | MacBookPro13,3 | 3 | 1 | 2 |  |
| Intel HD Graphics 515 | 0x191e0000 |  | 3 | 1 | 2 |  |
| Intel Iris Pro Graphics 580 | 0x193b0000 |  | 3 | 1 | 1 | 1 |
| Intel HD Graphics 520 | 0x19160002 |  | 3 | 1 | 2 |  |
| Intel Iris Graphics 540 | 0x19260002 | MacBookPro13,1 | 3 | 1 | 2 |  |
| Intel HD Graphics 515 | 0x191e0003 | MacBook9,1 | 3 | 1 | 2 |  |
| Intel Iris Graphics 540 | 0x19260004 |  | 3 | 1 | 2 |  |
| Intel Iris Graphics 550 | 0x19270004 | MacBookPro13,2 | 3 | 1 | 2 |  |
| Intel HD Graphics 530 | 0x191b0006 |  | 1 |  |  |  |
| Intel Iris Graphics 540 | 0x19260007 |  | 3 | 1 | 2 |  |

UINT8 skylake\_hd\_vals[8][4] = {

{ 0x0c, 0x00, 0x00, 0x00 }, //0 "graphic-options"

{ 0x01, 0x00, 0x00, 0x00 }, //1 "AAPL,Gfx324"

{ 0x01, 0x00, 0x00, 0x00 }, //2 "AAPL,GfxYTile"

{ 0xfa, 0x00, 0x00, 0x00 }, //3 "AAPL00,PanelCycleDelay"

{ 0x3c, 0x00, 0x00, 0x08 }, //4 "AAPL00,PanelPowerDown"

{ 0x11, 0x00, 0x00, 0x00 }, //5 "AAPL00,PanelPowerOff"

{ 0x19, 0x01, 0x00, 0x08 }, //6 "AAPL00,PanelPowerOn"

{ 0x30, 0x00, 0x00, 0x00 }, //7 "AAPL00,PanelPowerUp"

};

**kabylake平台**

| **显卡型号** | **platform-id** | **机型** | **接口** | **LVDS** | **DP** | **HDMI** |
| --- | --- | --- | --- | --- | --- | --- |
| Intel HD Graphics 630 | 0x59120000 | iMac18,2 iMac18,3 | 3 |  | 3 |  |
| Intel HD Graphics 520 | 0x59160000 | MacBookPro14,2 | 3 | 1 | 1 | 1 |
| Intel Iris Plus Graphics 640 | 0x59260000 |  | 3 | 1 | 2 |  |
| Intel Iris Plus Graphics 650 | 0x59270000 |  | 3 | 1 | 2 |  |
| Intel HD Graphics 630 | 0x591b0000 | MacBookPro14,3 | 3 | 1 | 1 | 1 |
| Intel HD Graphics 615 | 0x591e0000 |  | 3 | 1 | 2 |  |
| Intel HD Graphics 635 | 0x59230000 |  | 3 | 1 | 2 |  |
| Intel HD Graphics 615 | 0x591e0001 | MacBook10,1 | 3 | 1 | 2 |  |
| Intel Iris Plus Graphics 640 | 0x59260002 | MacBookPro14,1 iMac18,1 | 3 | 1 | 2 |  |
| Intel Iris Plus Graphics 650 | 0x59270004 | MacBookPro14,2 | 3 | 1 | 2 |  |
| Intel Iris Plus Graphics 640 | 0x59260007 |  | 3 | 1 | 2 |  |
| Intel Iris Graphics 650 | 0x59270009 |  | 3 | 1 | 2 |  |

UINT8 kabylake\_hd\_vals[8][4] = {

{ 0x0c, 0x00, 0x00, 0x00 }, //0 "graphic-options"

{ 0x01, 0x00, 0x00, 0x00 }, //1 "AAPL,Gfx324"

{ 0x01, 0x00, 0x00, 0x00 }, //2 "AAPL,GfxYTile"

{ 0xfa, 0x00, 0x00, 0x00 }, //3 "AAPL00,PanelCycleDelay"

{ 0x3c, 0x00, 0x00, 0x08 }, //4 "AAPL00,PanelPowerDown"

{ 0x11, 0x00, 0x00, 0x00 }, //5 "AAPL00,PanelPowerOff"

{ 0x19, 0x01, 0x00, 0x08 }, //6 "AAPL00,PanelPowerOn"

{ 0x30, 0x00, 0x00, 0x00 }, //7 "AAPL00,PanelPowerUp"

};

**新增平台**

| **显卡型号** | **platform-id** | **机型** | **接口** | **LVDS** | **DP** | **HDMI** |
| --- | --- | --- | --- | --- | --- | --- |
| Intel UHD Graphics 620 | 0x59170000 | Mobile |  |  |  |  |
| Intel UHD Graphics 610 | 0x3e900000 | Desktop |  |  |  |  |
| Intel UHD Graphics 610 | 0x3e930000 | Desktop |  |  |  |  |
| Intel UHD Graphics 630 | 0x3e910000 | Desktop |  |  |  |  |
| Intel UHD Graphics 630 | 0x3e920000 | Desktop |  |  |  |  |

**已知GPU的列表**

static struct gma\_gpu\_t KnownGPUS[] = {

//============== PowerVR ===================

//--------Canmore/Sodaville/Groveland-------

{ 0x2E5B, "Intel 500" }, //

//----------------Poulsbo-------------------

{ 0x8108, "Intel 500" }, // Menlow

{ 0x8109, "Intel 500" }, // Menlow

//----------------Lincroft------------------

{ 0x4102, "Intel 600" }, // Moorestown

//----------------Cedarview-----------------

{ 0x0BE0, "Intel GMA 3600" }, // Cedar Trail

{ 0x0BE1, "Intel GMA 3600" }, // Cedar Trail

{ 0x0BE2, "Intel GMA 3650" }, // Cedar Trail

{ 0x0BE3, "Intel GMA 3650" }, // Cedar Trail

//----------------Cloverview----------------

{ 0x08C7, "Intel GMA" }, // Clover Trail

{ 0x08C8, "Intel GMA" }, // Clover Trail

{ 0x08C9, "Intel GMA" }, // Clover Trail

{ 0x08CA, "Intel GMA" }, // Clover Trail

{ 0x08CB, "Intel GMA" }, // Clover Trail

{ 0x08CC, "Intel GMA" }, // Clover Trail

{ 0x08CD, "Intel GMA" }, // Clover Trail

{ 0x08CE, "Intel GMA" }, // Clover Trail

{ 0x08CF, "Intel GMA" }, // Clover Trail

//============== 1st generation ============

//----------------Auburn--------------------

{ 0x7800, "Intel 740" }, // Desktop - Intel 740 GMCH Express Chipset Family

//----------------Portola-------------------

{ 0x1240, "Intel 752" }, // Desktop - Intel 752 GMCH Express Chipset Family

//----------------Whitney-------------------

{ 0x7121, "Intel 3D graphics 810" }, // Desktop - Intel 810 GMCH Express Chipset Family

{ 0x7123, "Intel 3D graphics 810" }, // Desktop - Intel 810-DC100 GMCH Express Chipset Family

{ 0x7125, "Intel 3D graphics 810" }, // Desktop - Intel 810E GMCH Express Chipset Family

//----------------Solano--------------------

{ 0x1132, "Intel 3D graphics 815" }, // Desktop - Intel 815 GMCH Express Chipset Family

//============== 2nd generation ============

//----------------Almador-------------------

{ 0x3577, "Intel Extreme Graphics 830" }, // Mobile - Intel 830M GMCH Express Chipset Family

{ 0x357B, "Intel Extreme Graphics 835" }, // Desktop - Intel 835G GMCH Express Chipset Family

//----------------Brookdale-----------------

{ 0x2562, "Intel Extreme Graphics 845" }, // Desktop - Intel 845G GMCH Express Chipset Family

//----------------Montara-------------------

{ 0x358E, "Intel Extreme Graphics 2 854" }, // Mobile - Intel 852GM/855GM GMCH Express Chipset Family

{ 0x3582, "Intel Extreme Graphics 2 855" }, // Mobile - Intel 852GM/855GM GMCH Express Chipset Family

//----------------Springdale----------------

{ 0x2572, "Intel Extreme Graphics 2 865" }, // Desktop - Intel 865G Express Chipset Family

//============== 3rd generation ============

//----------------Grantsdale----------------

{ 0x2582, "Intel GMA 900" }, // Desktop - Intel 915G Express Chipset Family

{ 0x258A, "Intel GMA 900" }, // Desktop - Intel 915GM Express Chipset Family

{ 0x2782, "Intel GMA 900" }, // Desktop - Intel 915GV Express Chipset Family

//----------------Alviso--------------------

{ 0x2592, "Intel GMA 900" }, // Mobile - Intel 82915GM/GMS, 910GML Express Chipset Family

{ 0x2792, "Intel GMA 900" }, // Mobile - Intel 82915GM/GMS, 910GML Express Chipset Family

//----------------Lakeport------------------

{ 0x2772, "Intel GMA 950" }, // Desktop - Intel 82945G Express Chipset Family

{ 0x2776, "Intel GMA 950" }, // Desktop - Intel 82945G Express Chipset Family

//----------------Calistoga-----------------

{ 0x27A2, "Intel GMA 950" }, // Mobile - Intel 945GM Express Chipset Family - MacBook1,1, MacBook2,1

{ 0x27A6, "Intel GMA 950" }, // Mobile - Intel 945GM Express Chipset Family

{ 0x27AE, "Intel GMA 950" }, // Mobile - Intel 945GM Express Chipset Family

//----------------Bearlake------------------

{ 0x29B2, "Intel GMA 3100" }, // Desktop - Intel Q35 Express Chipset Family

{ 0x29B3, "Intel GMA 3100" }, // Desktop - Intel Q35 Express Chipset Family

{ 0x29C2, "Intel GMA 3100" }, // Desktop - Intel G33/G31 Express Chipset Family

{ 0x29C3, "Intel GMA 3100" }, // Desktop - Intel G33/G31 Express Chipset Family

{ 0x29D2, "Intel GMA 3100" }, // Desktop - Intel Q33 Express Chipset Family

{ 0x29D3, "Intel GMA 3100" }, // Desktop - Intel Q33 Express Chipset Family

//----------------Pineview------------------

{ 0xA001, "Intel GMA 3150" }, // Nettop - Intel NetTop Atom D410

{ 0xA002, "Intel GMA 3150" }, // Nettop - Intel NetTop Atom D510

{ 0xA011, "Intel GMA 3150" }, // Netbook - Intel NetBook Atom N4x0

{ 0xA012, "Intel GMA 3150" }, // Netbook - Intel NetBook Atom N4x0

//============== 4th generation ============

//----------------Lakeport------------------

{ 0x2972, "Intel GMA 3000" }, // Desktop - Intel 946GZ Express Chipset Family

{ 0x2973, "Intel GMA 3000" }, // Desktop - Intel 946GZ Express Chipset Family

//----------------Broadwater----------------

{ 0x2992, "Intel GMA 3000" }, // Desktop - Intel Q965/Q963 Express Chipset Family

{ 0x2993, "Intel GMA 3000" }, // Desktop - Intel Q965/Q963 Express Chipset Family

{ 0x29A2, "Intel GMA X3000" }, // Desktop - Intel G965 Express Chipset Family

{ 0x29A3, "Intel GMA X3000" }, // Desktop - Intel G965 Express Chipset Family

//----------------Crestline-----------------

{ 0x2A02, "Intel GMA X3100" }, // Mobile - Intel 965 Express Chipset Family - MacBook3,1, MacBook4,1, MacbookAir1,1

{ 0x2A03, "Intel GMA X3100" }, // Mobile - Intel 965 Express Chipset Family

{ 0x2A12, "Intel GMA X3100" }, // Mobile - Intel 965 Express Chipset Family

{ 0x2A13, "Intel GMA X3100" }, // Mobile - Intel 965 Express Chipset Family

//----------------Bearlake------------------

{ 0x2982, "Intel GMA X3500" }, // Desktop - Intel G35 Express Chipset Family

{ 0x2983, "Intel GMA X3500" }, // Desktop - Intel G35 Express Chipset Family

//----------------Eaglelake-----------------

{ 0x2E02, "Intel GMA 4500" }, // Desktop - Intel 4 Series Express Chipset Family

{ 0x2E03, "Intel GMA 4500" }, // Desktop - Intel 4 Series Express Chipset Family

{ 0x2E12, "Intel GMA 4500" }, // Desktop - Intel G45/G43 Express Chipset Family

{ 0x2E13, "Intel GMA 4500" }, // Desktop - Intel G45/G43 Express Chipset Family

{ 0x2E42, "Intel GMA 4500" }, // Desktop - Intel B43 Express Chipset Family

{ 0x2E43, "Intel GMA 4500" }, // Desktop - Intel B43 Express Chipset Family

{ 0x2E92, "Intel GMA 4500" }, // Desktop - Intel B43 Express Chipset Family

{ 0x2E93, "Intel GMA 4500" }, // Desktop - Intel B43 Express Chipset Family

{ 0x2E32, "Intel GMA X4500" }, // Desktop - Intel G45/G43 Express Chipset Family

{ 0x2E33, "Intel GMA X4500" }, // Desktop - Intel G45/G43 Express Chipset Family

{ 0x2E22, "Intel GMA X4500" }, // Mobile - Intel G45/G43 Express Chipset Family

{ 0x2E23, "Intel GMA X4500HD" }, // Mobile - Intel G45/G43 Express Chipset Family

//----------------Cantiga-------------------

{ 0x2A42, "Intel GMA X4500MHD" }, // Mobile - Intel 4 Series Express Chipset Family

{ 0x2A43, "Intel GMA X4500MHD" }, // Mobile - Intel 4 Series Express Chipset Family

//============== 5th generation ============

//----------------Ironlake------------------

{ 0x0042, "Intel HD Graphics" }, // Desktop - Clarkdale

{ 0x0046, "Intel HD Graphics" }, // Mobile - Arrandale - MacBookPro6,1

//============== 6th generation ============

//----------------Sandy Bridge--------------

//GT1

{ 0x0102, "Intel HD Graphics 2000" }, // Desktop - iMac12,1, iMac12,2

{ 0x0106, "Intel HD Graphics 2000" }, // Mobile

{ 0x010A, "Intel HD Graphics P3000" }, // Server

//GT2

{ 0x0112, "Intel HD Graphics 3000" }, // Desktop

{ 0x0116, "Intel HD Graphics 3000" }, // Mobile - MacBookAir4,1, MacBookAir4,2, MacBookPro8,2

{ 0x0122, "Intel HD Graphics 3000" }, // Desktop

{ 0x0126, "Intel HD Graphics 3000" }, // Mobile - MacBookPro8,1 Macmini5,1, Macmini5,2, Macmini5,3

//============== 7th generation ============

//----------------Ivy Bridge----------------

//GT1

{ 0x0152, "Intel HD Graphics 2500" }, // Desktop - iMac13,1(FB:0x01620006), iMac13,2(FB:0x01620007)

{ 0x0156, "Intel HD Graphics 2500" }, // Mobile

{ 0x015A, "Intel HD Graphics 2500" }, // Server

{ 0x015E, "Intel Ivy Bridge GT1" }, // Reserved

//GT2

{ 0x0162, "Intel HD Graphics 4000" }, // Desktop

{ 0x0166, "Intel HD Graphics 4000" }, // Mobile - MacBookPro9,1, MacBookPro9,2, MacBookPro10,1, MacBookPro10,2, MacBookAir5,1, MacBookAir5,2

{ 0x016A, "Intel HD Graphics P4000" }, // Server

//============== 7.5th generation ==========

//----------------Haswell-------------------

//GT1

{ 0x0402, "Intel Haswell GT1" }, // Desktop

{ 0x0406, "Intel Haswell GT1" }, // Mobile

{ 0x040A, "Intel Haswell GT1" }, // Server

{ 0x040B, "Intel Haswell GT1" }, //

{ 0x040E, "Intel Haswell GT1" }, //

//GT2

{ 0x0412, "Intel HD Graphics 4600" }, // Desktop

{ 0x0416, "Intel HD Graphics 4600" }, // Mobile

{ 0x041A, "Intel HD Graphics P4600" }, // Server

{ 0x041B, "Intel Haswell GT2" }, //

{ 0x041E, "Intel HD Graphics 4400" }, //

//GT3

{ 0x0422, "Intel Haswell GT3" }, // Desktop

{ 0x0426, "Intel Haswell GT3" }, // Mobile

{ 0x042A, "Intel Haswell GT3" }, // Server

{ 0x042B, "Intel Haswell GT3" }, //

{ 0x042E, "Intel Haswell GT3" }, //

//GT1

{ 0x0A02, "Intel Haswell GT1" }, // Desktop ULT

{ 0x0A06, "Intel Haswell GT1" }, // Mobile ULT

{ 0x0A0A, "Intel Haswell GT1" }, // Server ULT

{ 0x0A0B, "Intel Haswell GT1" }, // ULT

{ 0x0A0E, "Intel Haswell GT1" }, // ULT

//GT2

{ 0x0A12, "Intel Haswell GT2" }, // Desktop ULT

{ 0x0A16, "Intel HD Graphics 4400" }, // Mobile ULT

{ 0x0A1A, "Intel Haswell GT2" }, // Server ULT

{ 0x0A1B, "Intel Haswell GT2" }, // ULT

{ 0x0A1E, "Intel HD Graphics 4200" }, // ULT

//GT3

{ 0x0A22, "Intel Haswell GT3" }, // Desktop ULT

{ 0x0A26, "Intel HD Graphics 5000" }, // Mobile ULT - MacBookAir6,1, MacBookAir6,2, Macmini7,1

{ 0x0A2A, "Intel Haswell GT3" }, // Server ULT

{ 0x0A2B, "Intel Haswell GT3" }, // ULT

{ 0x0A2E, "Intel Iris Graphics 5100" }, // ULT - MacBookPro11,1

//GT1

{ 0x0C02, "Intel Haswell GT1" }, // Desktop SDV

{ 0x0C06, "Intel Haswell GT1" }, // Mobile SDV

{ 0x0C0A, "Intel Haswell GT1" }, // Server SDV

{ 0x0C0B, "Intel Haswell GT1" }, // SDV

{ 0x0C0E, "Intel Haswell GT1" }, // SDV

//GT2

{ 0x0C12, "Intel Haswell GT2" }, // Desktop SDV

{ 0x0C16, "Intel Haswell GT2" }, // Mobile SDV

{ 0x0C1A, "Intel Haswell GT2" }, // Server SDV

{ 0x0C1B, "Intel Haswell GT2" }, // SDV

{ 0x0C1E, "Intel Haswell GT2" }, // SDV

//GT3

{ 0x0C22, "Intel Haswell GT3" }, // Desktop SDV

{ 0x0C26, "Intel Haswell GT3" }, // Mobile SDV

{ 0x0C2A, "Intel Haswell GT3" }, // Server SDV

{ 0x0C2B, "Intel Haswell GT3" }, // SDV

{ 0x0C2E, "Intel Haswell GT3" }, // SDV

//GT1

{ 0x0D02, "Intel Haswell GT1" }, // Desktop CRW

{ 0x0D06, "Intel HD Graphics 5200" }, // Mobile CRW

{ 0x0D0A, "Intel Haswell GT1" }, // Server CRW

{ 0x0D0B, "Intel Haswell GT1" }, // CRW

{ 0x0D0E, "Intel Haswell GT1" }, // CRW

//GT2

{ 0x0D12, "Intel HD Graphics 5200" }, // Desktop CRW

{ 0x0D16, "Intel HD Graphics 5200" }, // Mobile CRW

{ 0x0D1A, "Intel Haswell GT2" }, // Server CRW

{ 0x0D1B, "Intel Haswell GT2" }, // CRW

{ 0x0D1E, "Intel Haswell GT2" }, // CRW

//GT3

{ 0x0D22, "Intel Iris Pro Graphics 5200" }, // Desktop CRW - iMac14,1, iMac14,4

{ 0x0D26, "Intel Iris Pro Graphics 5200" }, // Mobile CRW - MacBookPro11,2, MacBookPro11,3

{ 0x0D2A, "Intel Haswell GT3" }, // Server CRW

{ 0x0D2B, "Intel Haswell GT3" }, // CRW

{ 0x0D2E, "Intel Haswell GT3" }, // CRW

//----------------ValleyView----------------

{ 0x0F30, "Intel HD Graphics" }, // Bay Trail

{ 0x0F31, "Intel HD Graphics" }, // Bay Trail

{ 0x0F32, "Intel HD Graphics" }, // Bay Trail

{ 0x0F33, "Intel HD Graphics" }, // Bay Trail

{ 0x0155, "Intel HD Graphics" }, // Bay Trail

{ 0x0157, "Intel HD Graphics" }, // Bay Trail

//============== 8th generation ============

//----------------Broadwell-----------------

//GT1

{ 0x1602, "Intel Broadwell GT1" }, // Desktop

{ 0x1606, "Intel Broadwell GT1" }, // Mobile

{ 0x160A, "Intel Broadwell GT1" }, //

{ 0x160B, "Intel Broadwell GT1" }, //

{ 0x160D, "Intel Broadwell GT1" }, //

{ 0x160E, "Intel Broadwell GT1" }, //

//GT2

{ 0x1612, "Intel HD Graphics 5600" }, // Mobile

{ 0x1616, "Intel HD Graphics 5500" }, // Mobile

{ 0x161A, "Intel Broadwell GT2" }, //

{ 0x161B, "Intel Broadwell GT2" }, //

{ 0x161D, "Intel Broadwell GT2" }, //

{ 0x161E, "Intel HD Graphics 5300" }, // Ultramobile - MacBook8,1

//GT3

{ 0x1626, "Intel HD Graphics 6000" }, // Mobile - iMac16,1, MacBookAir7,1, MacBookAir7,2

{ 0x162B, "Intel Iris Graphics 6100" }, // Mobile - MacBookPro12,1

{ 0x162D, "Intel Iris Pro Graphics P6300" }, // Workstation, Mobile Workstation

//GT3e

{ 0x1622, "Intel Iris Pro Graphics 6200" }, // Desktop, Mobile - iMac16,2

{ 0x162A, "Intel Iris Pro Graphics P6300" }, // Workstation

//RSVD

{ 0x162E, "Intel Broadwell RSVD" }, // Reserved

{ 0x1632, "Intel Broadwell RSVD" }, // Reserved

{ 0x1636, "Intel Broadwell RSVD" }, // Reserved

{ 0x163A, "Intel Broadwell RSVD" }, // Reserved

{ 0x163B, "Intel Broadwell RSVD" }, // Reserved

{ 0x163D, "Intel Broadwell RSVD" }, // Reserved

{ 0x163E, "Intel Broadwell RSVD" }, // Reserved

//------------Cherryview/Braswell-----------

{ 0x22B0, "Intel HD Graphics 400" }, // Cherry Trail - Atom x5 series - Z83X0/Z8550(HD Graphics 400)

{ 0x22B1, "Intel HD Graphics 405" }, // Cherry Trail - Atom x7 series - Z8750(HD Graphics 405)

{ 0x22B2, "Intel HD Graphics 400" }, // Braswell - Cerelon QC/DC series - X3X60(HD Graphics 400)

{ 0x22B3, "Intel HD Graphics 405" }, // Braswell - Pentium QC series - X3710(HD Graphics 405)

//============== 9th generation ============

//----------------Skylake-------------------

//GT1

{ 0x1902, "Intel HD Graphics 510" }, // Desktop

{ 0x1906, "Intel HD Graphics 510" }, // Mobile

{ 0x190A, "Intel Skylake GT1" }, //

{ 0x190B, "Intel HD Graphics 510" }, //

{ 0x190E, "Intel Skylake GT1" }, //

//GT2

{ 0x1912, "Intel HD Graphics 530" }, // Desktop - iMac17,1

{ 0x1916, "Intel HD Graphics 520" }, // Mobile

{ 0x191A, "Intel Skylake GT2" }, //

{ 0x191B, "Intel HD Graphics 530" }, // Mobile - MacBookPro13,3

{ 0x191D, "Intel HD Graphics P530" }, // Workstation, Mobile Workstation

{ 0x191E, "Intel HD Graphics 515" }, // Mobile - MacBook9,1

{ 0x1921, "Intel HD Graphics 520" }, //

//GT2f

{ 0x1913, "Intel Skylake GT2f" }, //

{ 0x1915, "Intel Skylake GT2f" }, //

{ 0x1917, "Intel Skylake GT2f" }, //

//GT3

{ 0x1923, "Intel HD Graphics 535" }, //

//GT3e

{ 0x1926, "Intel Iris Graphics 540" }, // Mobile - MacBookPro13,1

{ 0x1927, "Intel Iris Graphics 550" }, // Mobile - MacBookPro13,2

{ 0x192B, "Intel Iris Graphics 555" }, //

{ 0x192D, "Intel Iris Graphics P555" }, // Workstation

//GT4

{ 0x192A, "Intel Skylake GT4" }, //

//GT4e

{ 0x1932, "Intel Iris Pro Graphics 580" }, //

{ 0x193A, "Intel Iris Pro Graphics P580" }, // Server

{ 0x193B, "Intel Iris Pro Graphics 580" }, // Desktop, Mobile

{ 0x193D, "Intel Iris Pro Graphics P580" }, // Workstation, Mobile Workstation

//----------------Goldmont------------------

{ 0x0A84, "Intel HD Graphics" }, // Broxton(cancelled)

{ 0x1A84, "Intel HD Graphics" }, // Broxton(cancelled)

{ 0x1A85, "Intel HD Graphics" }, // Broxton(cancelled)

{ 0x5A84, "Intel HD Graphics 505" }, // Apollo Lake

{ 0x5A85, "Intel HD Graphics 500" }, // Apollo Lake

//============== 9.5th generation ==========

//----------------Kaby Lake-----------------

//GT1

{ 0x5902, "Intel HD Graphics 610" }, // Desktop

{ 0x5906, "Intel HD Graphics 610" }, // Mobile

{ 0x590A, "Intel Kaby Lake GT1" }, //

{ 0x5908, "Intel Kaby Lake GT1" }, //

{ 0x590B, "Intel Kaby Lake GT1" }, //

{ 0x590E, "Intel Kaby Lake GT1" }, //

//GT1.5

{ 0x5913, "Intel Kaby Lake GT1.5" }, //

{ 0x5915, "Intel Kaby Lake GT1.5" }, //

//GT2

{ 0x5912, "Intel HD Graphics 630" }, // Desktop - iMac18,2, iMac18,3

{ 0x5916, "Intel HD Graphics 620" }, // Mobile

{ 0x591A, "Intel HD Graphics P630" }, //

{ 0x591B, "Intel HD Graphics 630" }, // Mobile - MacBookPro14,3

{ 0x591D, "Intel HD Graphics P630" }, // Workstation, Mobile Workstation

{ 0x591E, "Intel HD Graphics 615" }, // Mobile - MacBook10,1

//GT2F

{ 0x5921, "Intel Kaby Lake GT2F" }, //

//GT3

{ 0x5923, "Intel HD Graphics 635" }, //

{ 0x5926, "Intel Iris Plus Graphics 640" }, // Mobile - MacBookPro14,1, iMac18,1

{ 0x5927, "Intel Iris Plus Graphics 650" }, // Mobile - MacBookPro14,2

//GT4

{ 0x593B, "Intel Kaby Lake GT4" }, //

//-------------Kaby Lake Refresh------------

//GT1.5

{ 0x5917, "Intel UHD Graphics 620" }, // Mobile

//----------------Coffee Lake---------------

//GT1

{ 0x3E90, "Intel UHD Graphics 610" }, // Desktop

{ 0x3E93, "Intel UHD Graphics 610" }, // Desktop

//GT2

{ 0x3E91, "Intel UHD Graphics 630" }, // Desktop

{ 0x3E92, "Intel UHD Graphics 630" }, // Desktop

{ 0x3E94, "Intel Coffee Lake GT2" }, //

{ 0x3E96, "Intel Coffee Lake GT2" }, //

{ 0x3E9B, "Intel Coffee Lake GT2" }, //

//GT3

{ 0x3EA5, "Intel Coffee Lake GT3" }, //

{ 0x3EA6, "Intel Coffee Lake GT3" }, //

{ 0x3EA7, "Intel Coffee Lake GT3" }, //

{ 0x3EA8, "Intel Coffee Lake GT3" }, //

//============== 10th generation ===========

//----------------Cannonlake----------------

//GT0.5

{ 0x5A49, "Intel Cannonlake GT0.5" }, //

{ 0x5A4A, "Intel Cannonlake GT0.5" }, //

//GT1

{ 0x5A41, "Intel Cannonlake GT1" }, //

{ 0x5A42, "Intel Cannonlake GT1" }, //

{ 0x5A44, "Intel Cannonlake GT1" }, //

//GT1.5

{ 0x5A59, "Intel Cannonlake GT1.5" }, //

{ 0x5A5A, "Intel Cannonlake GT1.5" }, //

{ 0x5A5C, "Intel Cannonlake GT1.5" }, //

//GT2

{ 0x5A50, "Intel Cannonlake GT2" }, //

{ 0x5A51, "Intel Cannonlake GT2" }, //

{ 0x5A52, "Intel Cannonlake GT2" }, //

{ 0x5A54, "Intel Cannonlake GT2" }, //

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