

EXP GDC

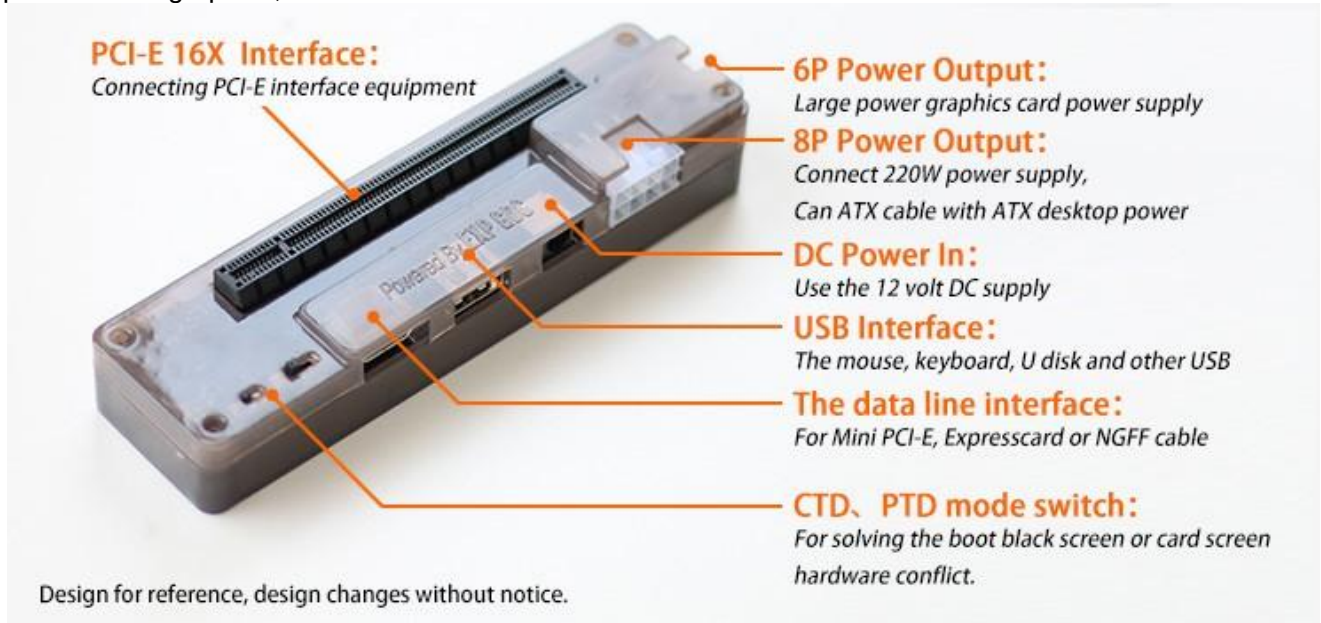
Laptop External Graphics Adapter DOCK

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Overview

EXP GDC is the laptop external graphics adapter equipment; it can help you to use the external independent high-performance graphics, can be used to access any of the PCI-E interface equipment, used to enhance the performance of the laptop, so that you can play those huge games requesting high-performance graphics;



Notice

1. This is the DIY product, it needs some basic computer knowledge and practical ability. we advise that you study carefully this from our WIKI before you purchasing.
WIKI address: http://www.raspberrypiwiki.com/index.php/EXP_GDC (We will regularly update the product's knowledge on WIKI);
2. We advise that you should read the USER MANUAL carefully after you receive our product. (User manual will be send to you with EXP GDC equipment).
3. The product is not suitable with any kinds of laptop model because of the compatibility, Please read the details clearly or consult with us before purchasing.
4. Please select your EXP GDC version according your laptop wireless network card; Sometime you need to uppack your loptop to confirm it if you don't know which interface.
5. For NGFF version, in generally, the laptops after 2015 would be used the NGFF slot.
6. Using notice:
 - 1/ Turn off PCI-E energy saving options in the power management system and BIOS, it can avoid the system stagnation as a reason long standby.
 - 2/ Do not use the system sleep or standby function which may cause un-restart of the system, but some laptop may not be affected.
 - 3/ Please install your device according to the manual, do not plug in or out your equipment when power on.

EXP GDC versions

There are three type EXP GDC according to the difference between interface types:

[Mini Pci-e Version](#)

[NGFF M.2 A key Version](#)

NGFF M.2 M key Version (Release soon, or please contact with us)
Express Card Version(depend on your laptop model)

Interface Types:

The EXP GDC has to be used with the built-in wireless card interface of the laptop.
The laptops without Expresscard interface have to be disassembled to confirm the Wireless card interface type.

Different versions, the interface is not the same, here is the interface introduction:

- Expresscard interface in the left and right sides of the notebook, the width is 3.4CM or 5.4CM. The height is 5MM, the depth is about 7CM, the attention is screened.

EXPRESSCARD Interface 26PIN inside a row of contact pads



The Expresscard interface has a row 26 PIN contact, our adapter supports 54# and 34#.

- Other notebook need to disassemble the installation, use the wireless network card interface, namely Mini PCI-E or NGFF.

One screw, in the middle



NGFF

Tow screws, on both sides



Mini PCI-E

Support List:

(The following model is our customer feedback to us that they use and without problem)

For Lenovo W530T520W520X220X220TZ570T420Y460Y560PT410E420X201X201sEdge
 14T410sT400T510X201TX200W500T61pX61TT61T60T520T420Sy470T420IY480G480k580sE520Y580G500E46AY530
 G510Y400G500V460Y560Py480ny480E420K29B470Z470L421SL410KE420SG470G450z465Y500V370G430Z370Y485
 Y410Pv1000s410py471as230uV570e420sZ500V470Y40 70G710AT-ISEY430pS400SR1000B5400405S
 A8Y50Z501Z480Z580U310K46Az380
 For Dell E6520Vostro 3450XPS15.L502Studio 1557E6220M4500E6420E4300Studio 1557XPS
 1645E4310M4600Insp.1545XPS 1340E4300XPS 1640E6500Insp 1420XPS 1340Vostro 15001440Vostro v130XPS
 M1530D830M1330Studio 1555Insp 1520Vostro
 1310E15051545E6520E6520E6220E5410E4310E641014RM12104600MD630E64206320N4120N50103421N301077201
 4R4728152014rd658N411014RD658inspiron15-3521e632074205537xps164515r7520767015R 45265547773014R
 5420M6600752055374050vostro3300n3420L702X3542155815 75484z-5423E6230
 For Sony Z21VPC-Z11VPC-Z13VPC-Z12VGN-FW45Z46GDVGN-
 NS110eEA27ECVPCA36ECEA47ECCB36ECNw35eEA200CS138Vgn-
 nw71fbSVT11138CCSVpcs128ecFW17Z45vpcea25fgvpcea18ecVPCEB26FXVPCZ138GGsve14a28ccsPcg-71212tSVE
 141
 For HP 4530s2560P8460P4330s2540P8440PDV4-20002530P2740P6930P6930P2730PHDX9000Pavilion
 DV4DV9690enCQ60DV71267CLHDX16HDX18TTX22510PDV7-
 3020EDDV2000dv2416US6910PNC640021334530sHp8440p14 beatsG42DV51220TXN51108570PCQ35-
 219TXDV2804TXCQ45CQ40CQ42 285TX8560P2730p4321sDV7HP44318470P2570Penvy17
 j120usHP6450BHP8470Pcq15-102tx2570P8460P
 For Fujitsu AH531T731S6420T901T5010U9200AH56/Gnh532
 For Acer 5755G3820TG5920GEX5620Z5742G6930952556201810TZ5720G1410Ferrari One4752G4750GE1-
 471G5750G5951GE1-571GV3-571GV5-472G4315V5-471Gv3772g4738GAcer4745gE5-511G5552g
 For MSI CX623CR720A6200-021USCR630M610GX640GE60
 For Toshiba R840A665L305-S5921L300A505-6965L300L305-S5921M332M780L700L650-02BL800
 For Clevo M860TUM570RU
 For Sager NP2096NP8662NP5793
 For NEC Versa E6500
 For Asus
 F8SAX42JRX59SL1015PEMM60JY581CX81x55vX450VBX450JSx450cN61JVx402caU24Er400P53SjN75sln75sN61JQ
 N56n55sfn53k56ck55vdK53SVK52DRk45vsK43SMa55vdK42JBK40IPK40INg73swF83seA73SA55VMA53a450jA43XA43
 sa42jk55vmk43SDG74SXN43sln55slk55vmA45K56CBK43DK42kvX55XI237VD-
 SLX550VCN81VGX751LA53SA53SMa450jf
 For LG P300
 For Samsung R780NP300E4ANP270E5J-K01CNr428rv420
 For HASEE A460-I7K590CA560PK580PA430K470p460PA550k602cK590SK500DE400K500C-i7 D1k660EA460p-
 i7K480N
 For Tsinghua University u49fk41HA14RM0C
 For Blue sky p170em
 For Haier 7g-2X5P
 For Gigabyte p15f V2
 For Fangzhengyihe a600

Whitelist

Some laptop models will have the compatibility of white list problem. Someone can find the suitable BIOS (those without white list) online, or some people know it well can fix the problem by themselves.
 NOTE: DON'T BUY if you are not DIY GEEK although you have these laptops.

White List:(NEED burn BIOS, But we don't provide BIOS)

Lenovo: E530, L430, E43, U410, E49, K49, E545, E431, E531, K29, K27, E320, B590, k47, X1, X240, T440, T430,

Ready-known BIOS with white list: Lenovo Z480, Z580, v480C, e4430, M490, E440, V490u, V580c, M4400s, U310, K47A, K2450, B5400, E555, E330

HP: 5310M, hp probook 5220m

Asus : K45VM

PS: This WHITE LIST only include a part of laptop. please tell me if you find new model.

Black List

For those Black List laptop model, we advice the user DO NOT try to use it with our product.

NOTE: DON'T BUY if you have these laptops.

Asus (N55SF, N75 ACPI, ASUS A53XI24 1SV-SL, K43SD, A73S, K53SD, X8dij, A43s, n55sl, k45dr)

Lenovo E530, L430, E43, U410, E49, K49, G50-75M(New Add)

HP H533OM, 6910, 5310M

Hasee ui45, EVI4

Haier T68

Acer 4739z

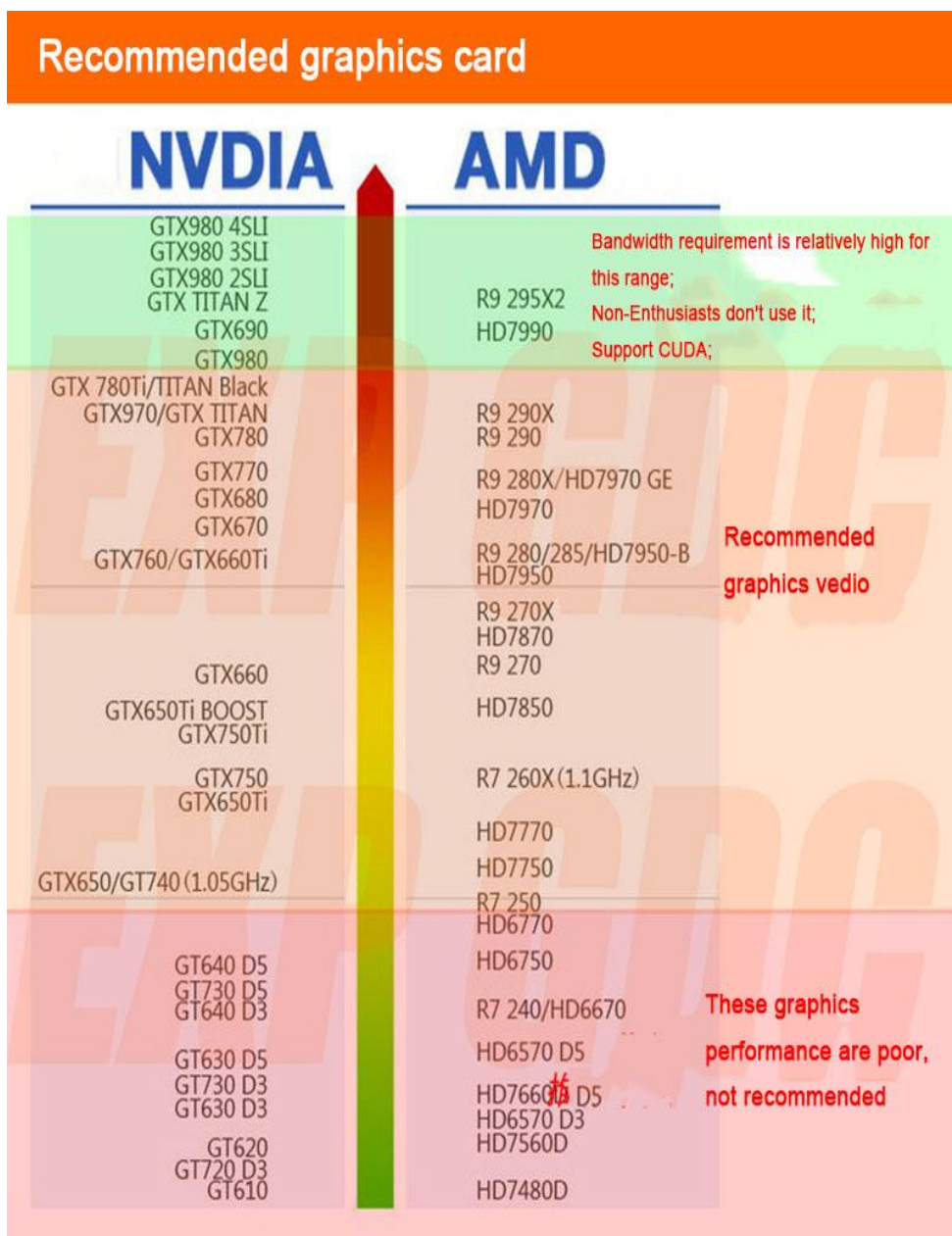
Samsung 450R

Inner Screen Usage:

1. Your laptop must be Intel (R) HD graphics.
2. Your external graphics card must be above GTS450, otherwise you must use external monitor.

Recommended Graphics Card:

The list of recommended graphics card:



For GTX 1060 1070 1080

They are compatible with the GDC, but you must install the August 2016 driver. And GTX 1080 is the most powerful we Recommend.

For GTX1050

The technician tell us that GTX 1050 is new product and the drive is not perfect to support this product. So, we do not recommend you to buy it.

EXP GDC Features

- Support for PCI-E X16, actual X1 mode (according to different laptop configuration can be upgraded to X2 mode)
- Operating system: Windows XP/7/8/8.1, Linux etc.
- Products type: Laptop PCI-E expansion device
- Product positioning: Laptop performance upgrade.

(PS: Win XP, Win8/8.1 is only compatible with the laptop with external screen)

- Input interface:
Mini PCI-E (WLAN\WWAN\DMC)
Expresscard(34#/54#) (depend on your laptop model)
NGFF(Slot A/E)
NGFF(Slot M) (Release soon, or please contact with us)
- Power input/output interface:
Support external DELL power adapter or ATX power;
8P interface: 220W max.
DC interface: 5.5x 2.1mm, 150W max, support soft switch function.(ATX cable with no power limit)
- Extended support: PCI-E X16:DMI GT/s (X1) 5
- Other function:
CTD switch(Timedelay): 6S
PTD switch (Timedelay): 7S, 14S
USB:1.0/1.1/2.0

EXP GDC Upgrade Features

1. Dual TD compatible switch (hardware conflict resolution)
2. Multistage anti interference circuit
3. Data line reinforcement
4. Multi power automatic switching (support for soft start)
5. High quality imported electronic components
6. Support metal cabinet (optional)
7. Double copper technology to enhance system power supply
8. Isolation protection circuit
9. LED status indicator
10. USB interface extension
11. Lateral 6PIN power supply interface

EXP GDC Packing List

- 1 x EXP GDC PCI-E adapter
- 1 x Interface Cable (about 75cm Length)
- 1 x ATX PSU power cable (about 7cm Length)

EXP GDC Application

GPU Computing
Using EXP GDC allows laptop use NVIDIA CUDA technology GPU Accelerated computing and reduce energy consumption while reducing large sums of investment.

Titans game
Using EXP GDC allows notebook external desktop graphics card, fully mentionL graphics performance, so that ordinary notebook turned the game.

Engineering debug applications
Using EXP GDC allows easy access to a variety of engineering surveying notebook cards, party Then debug device.

Pro video workstation
Using EXP GDC Professional DECKLINK can be easily connected to other video or AJA Capture card device, or with dedicated NVIDIA graphics cards to achieve superior performance.

Data Collection Mapping
Using EXP GDC allows easy access to the notebook capture card, to achieve a large fieldPortable data collection order.

More...
Using EXP GDC allows notebook expansion of the standard PCI-E slot,In order to achieve scalability desktop, you can connect more PCI-E devices.

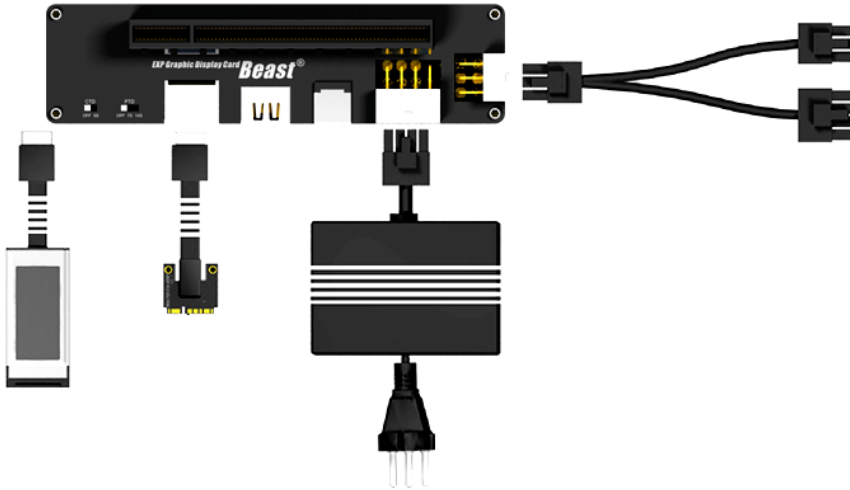
Hardware installation

Connection diagram:



Installation method with external power

You can use DELL power adapter;



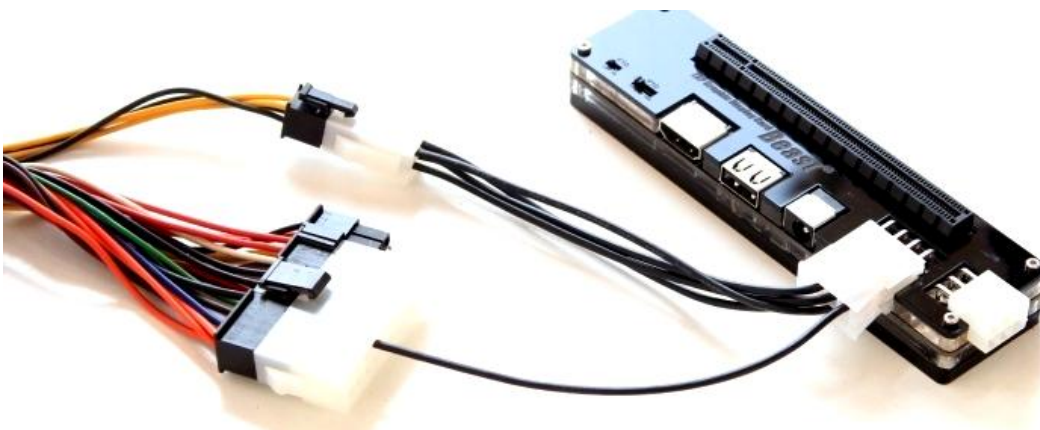
The other end is connected to the data line interface board corresponding to the "reference chart". The HDMI EXP GDC board can not be connected with other HDMI data line, otherwise it will cause equipment damage.

The graphics card and power supply installation(DELL DA-2/D220P), please ensure that the video card power supply interface fully connected

NOTICE:

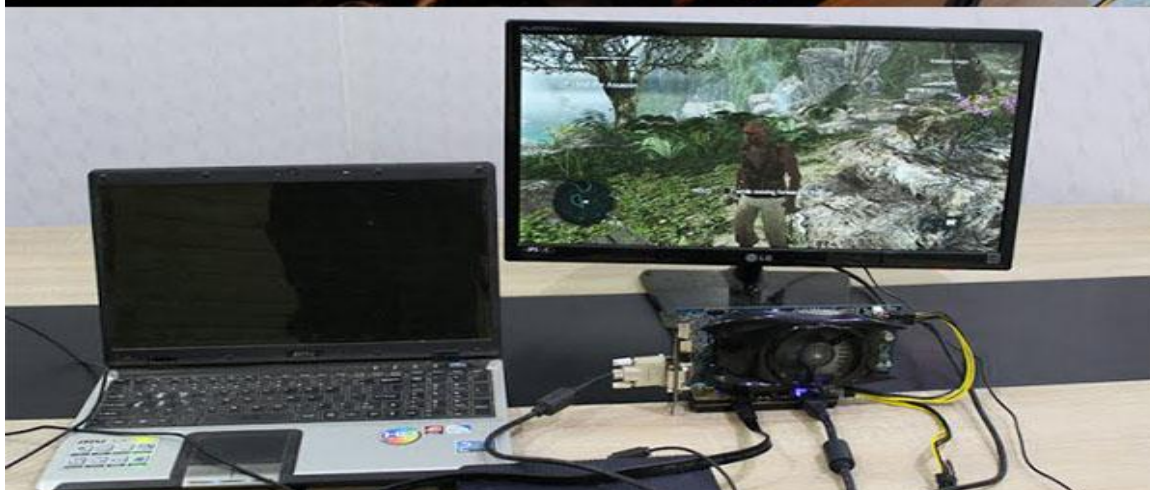
Must restart the laptop after the equipment is installed;
MUST POWER OFF when you pull out or pull in the device, OR the device easily be damaged.

ATX Power supply installation method



Note: Graphics card Independent power supply comes from ATX

Reference Resource



Trouble shooting

1, Start the black screen, no display.

1] some of the motherboard may not support more than 4G of memory, please put down to a single memory memory below 4G.

2] check hardware is connected, the interface contact is good, the use of second-hand graphics please note wipe graphics gold nail.

3] check the graphics card power supply is normal, double 6P interface are connected, the use of ATX power supply whether it conforms to the graphics card power standard.

4] integrated graphics notebook could automatically switch to the external screen display, please pay attention to connect the external display, an external monitor is connected with the output end is connected with the graphics on the outside.

2, After the start of the notebook repeatedly restart

1] notebook upgrade to the latest version of BIOS

2] use of sleep to boot

3, Atart the newspaper 1802 or 1804 error,

1] brush notebook BIOS white list

2] in BIOS to turn off external graphics card used in the port, the corresponding port opened in DIY EGPU.

4, Start the PXE error

1) shut down in the notebook BIOS off the network boot option "BOOT TO LAN"

5, The card in the startup LOGO

1] some of the motherboard may not support more than 4G of memory, please put down to a single memory memory below 4G;

2] the use of sleep to boot

3] in the notebook BIOS off network boot option "BOOT TO LAN"

4] switching in BIOS "Video device 'or" Graphic mode "options, Integrated or UMA to set explicit modes, switchable switching mode, THINKPAD model in PCI EXPRESS PCI-E graphics mode

6, Enter the system blue screen

1] but the add in graphics card into the system uninstall drive with built-in alone, and disable the built-in alone in Device Manager

2] in BIOS to turn off the wireless network card. (this is only for GM45 before platform notebook)

3] we recommend replacing the operating system.

7, In the WINDOWS picture card

1] but the add in graphics card into the system uninstall drive with built-in alone, and disable the built-in alone in Device Manager

2] we recommend replacing the operating system.

8, Enter the system seriously slow, slow response

1] notebook upgrade to the latest version of BIOS

2] used a single memory

3] to unload and disable the notebook comes with video

4] check hardware wiring is correct. Using second-hand graphics card please note wipe graphics gold nail

5] supply is normal, double 6P power supply port card must connect to the power line; power supply using ATX please note whether the 12V output power to meet the demand of the card. Do not use a copycat ATX desktop power.

9, Installed driver can not open after the graphics card control panel

1] in the resolution settings click the "test" - "recognition" to activate the card

2] the memory drops below 4G

3] re install the graphics driver

4] right connect an external monitor

5] uninstall disable built-in alone

10, In the device manager Huang Biao graphics tips

7] install the graphics driver

8] to check whether the normal power supply

9] the memory drops below 4G

10] uninstall disable built-in alone

11] we recommend replacing the operating system

12] DIY EGPU software installation settings for 36BIT (**DIY EGPU for the payment software, please contact the copyright holder to buy.**)

13] DIY EGPU closed DGPU

11, Notebook monitor does not display

15] in the resolution setting switch display

16] using the DIY EGPU set to open IGPU

12, External monitor does not display

17] check the display is connected on the external graphics card

18] display input settings are correct

19] in the resolution setting switch display

20] using the DIY EGPU set to open EGPU

13, Game performance improvement is not obvious

22] Note set graphics optimization

24] the graphics card driver is not installed properly

25] display settings are not correct

26] card supply shortage

27] games support problem, replace the game have a look effect

The common laptop's installation configuration

Lenovo T410/T420/T430	BIOS-DISPLAY-Graphic Device Set to INTEGRATED GRAPHICS
Lenovo Y470/G470/Y480/G480	BIOS-GRAPHIC DEVICE Set to UMA, Disable PXE BBOT TO LAN
Acer 4750G/4752G/5750G	BIOS-GRAPHIC MODE Set to integrated, Disable NETWORK BOOT
HP 8460P/8470P	PTD Set to 7S
HP cq45	PTD Set to 7S
HP envy 14 beats	PTD Set to 7S
HP 2730P	PTD Set to 7S, Disable PXE BOOT TO LAN or NETWORK BOOT
HP CQ35-219TX	Insert EC cable before get into the system
HASEE K590C	Disable the built-in graphic
DELL 4600M	Graphics mode can be switched in BIOS
Lenovo Z470	If you encounter a black boot, turn off the wireless NIC hard switch
Asus N56	To uninstall the driver of the build-in depend graphic, then connect the external graphics card.
MSI GE60	Update BIOS to the latest

FAQ:

More Detail & FAQ please refer to WIKI:

http://www.raspberrypiwiki.com/index.php/EXP_GDC

Q 1: My laptop is xxx-xxx, will my laptop compatible with the EXP GDC?

Answer:

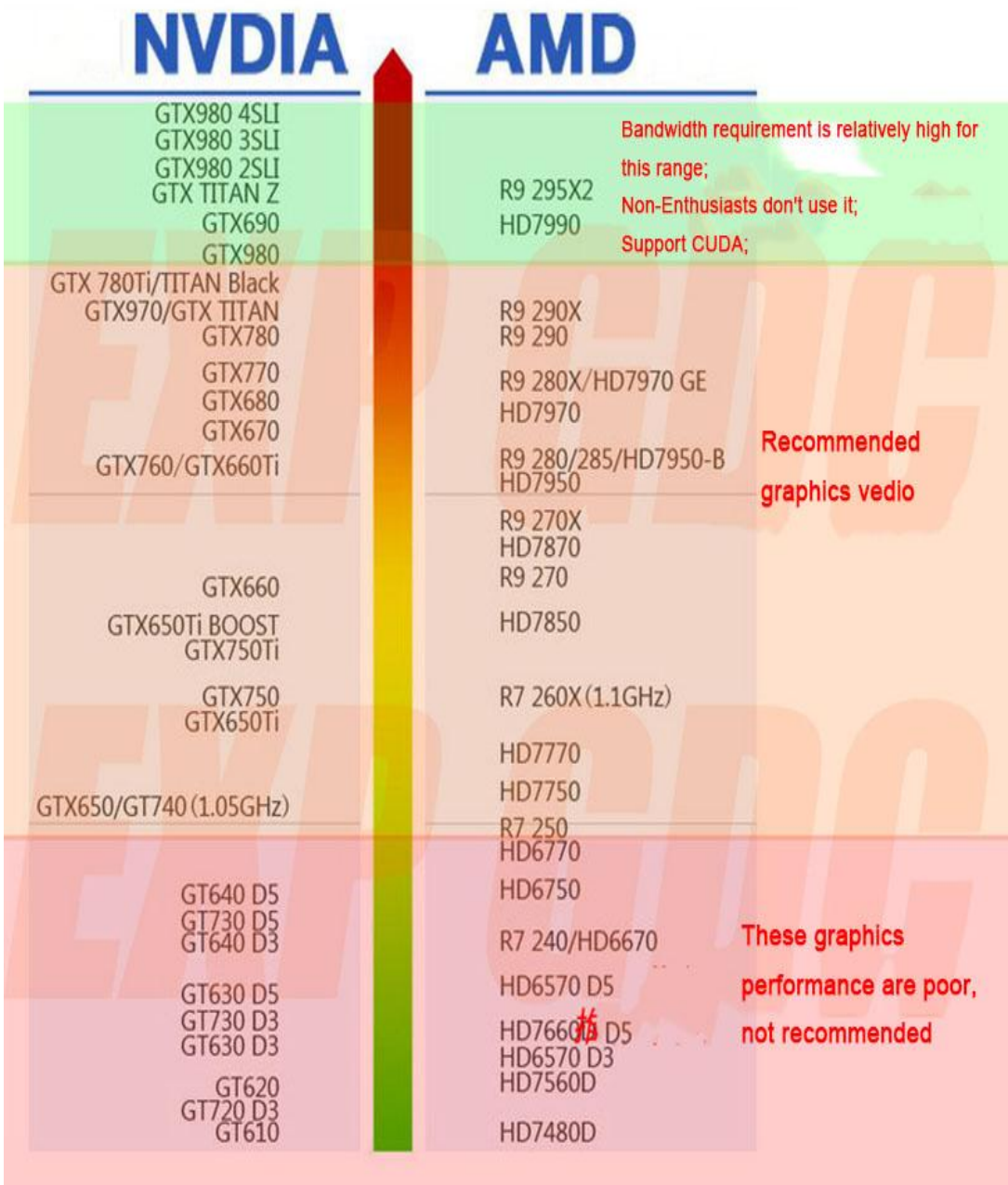
Laptops released after year 2007 almost all fit EXP GDC when they have mini PCI-E slot or EXPRESSCARD slot.

Q 2:What graphic cards should I choose?

Answer:

The list of Recommended graphics card

Recommended graphics card



Q 3: What power supply should I use?

Answer:

We only offer ATX cable with the package to power the EXP GDC. Please choose external power for your graphics card.

6P power output:

The maximum provides the interface output 6PIN+8PIN, maximum support 12A, maximum support 18A output with the motherboard and the. If more than 220W using power card please with ATX cable, ATX power supply used for the graphics.

8P power supply interface:

The main board and the equipment of the power supply interface, support soft switch function (notebook starting power starting, notebook shut down power off). The power of this interface, you can use 1 special DELL 220W, 2, can be matched with ATX cable using the ATX power to support external graphics power, soft switching function.

DC power supply interface:

Support DC 12 volt power supply input interface type outer diameter 5.5MM, inner diameter 2.1MM, maximum power 150W, support the soft switch function.

Q 4: Could it work with its own monitor?

Answer:

If you use the AMD series card, it must to connect with the external monitor to use.

If you use NVIDIA series card which over GTX450, and your laptop own Intel Core graphics, and use the EGPU software to set, then it can use the laptop internal monitor, otherwise, it need to connect with the external monitor.