

# EXP GDC

## Laptop External Graphics Adapter DOCK

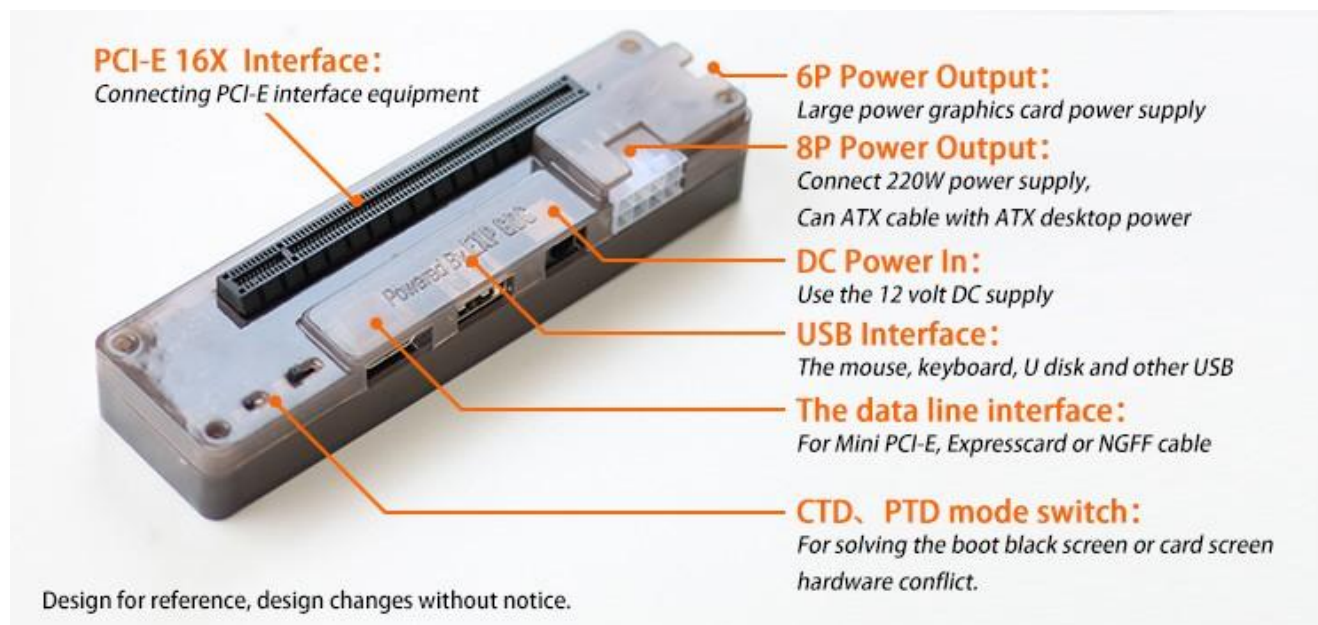
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# Overview

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](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)

## 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

## 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

## Hardware requirements

### 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.

## 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



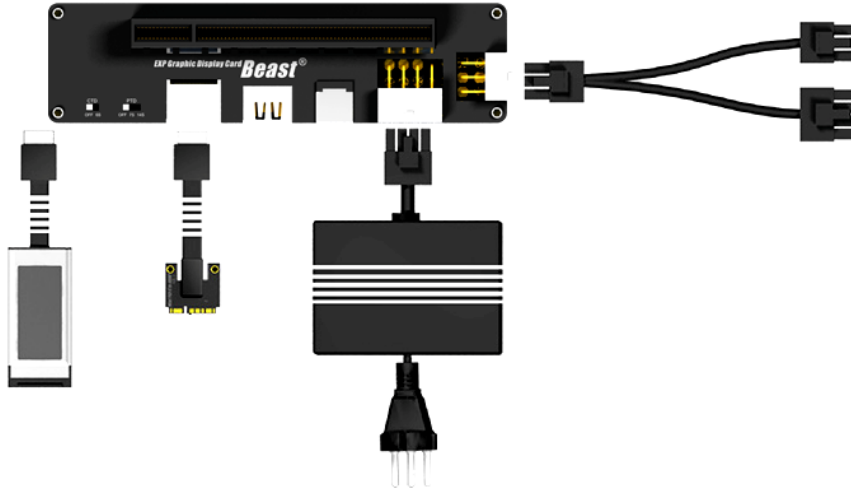
## Connection diagram:





## 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](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		
NVIDIA	AMD	
GTX980 4SLI GTX980 3SLI GTX980 2SLI GTX TITAN Z GTX690 GTX980	R9 295X2 HD7990	Bandwidth requirement is relatively high for this range; Non-Enthusiasts don't use it; Support CUDA;
GTX 780Ti/TITAN Black GTX970/GTX TITAN GTX780 GTX770 GTX680 GTX670 GTX760/GTX660Ti	R9 290X R9 290 R9 280X/HD7970 GE HD7970 R9 280/285/HD7950-B HD7950	<b>Recommended graphics video</b>
GTX660 GTX650Ti BOOST GTX750Ti GTX750 GTX650Ti	R9 270X HD7870 R9 270 HD7850	
GTX650/GT740 (1.05GHz)	R7 260X (1.1GHz) HD7770 HD7750 R7 250 HD6770 HD6750	
GT640 D5 GT730 D5 GT640 D3 GT630 D5 GT730 D3 GT630 D3 GT620 GT720 D3 GT610	R7 240/HD6670 HD6570 D5 HD7660 D5 HD6570 D3 HD7560D HD7480D	<b>These graphics performance are poor, not recommended</b>

**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.