

Game Controller Testing Guide - ArcaOS / eCS / OS/2

Version 1.1

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Background

The OS/2 Operating System originally included device drivers to allow use of Game Controllers (Joysticks and Game Pads) to be used in both the native OS/2 system and the DOS system which came as a virtual product packaged within OS/2.

These devices were accessed through the now legacy "game port", a 15 pin connector, which a one time was originally readily available on IBM and compatible computers, on the motherboard or as an add-on board, in the 1980's and 90's. The game port has since become obsolete, being superseded by game controllers which are connected through the Universal Serial Bus (USB) connectors commonly available on all digital devices now.

The game controller device drivers were never updated within OS/2, or subsequent incarnations of the Operating System (first eComStation and now the existing ArcaOS system) for use through a USB port.

The initial goal of this testing is to beta test game controller drivers developed by Wim Brul for use under both ArcaOS (and the Legacy Systems) as well as in a Virtual DOS Machine (VDM) or through the SDL based DOSBOX, a DOS emulator program used widely to run legacy DOS software, on most operating systems available today.

Dependencies

The base USB related device drivers and associated USB libraries for your operating system must be installed and functioning correctly to allow access to the USB ports on your system. These are normally installed during initial installation. If not, refer to the instructions for your operating system on how to install the base USB drivers.

Device Driver Download

The device drivers to be tested require Wim Brul's USB Extended Control Driver to be installed and functioning correctly first (refer to Installation below):

Download location: <https://home.hccnet.nl/w.m.brul/usbprobe/index.html>
or <https://www.os2world.com/wiki/index.php/USBECD#Links>

Download file: usbecd23.zip

Latest Version: 2.3 (2015-07-27)

The following experimental game controller drivers are also needed for testing purposes:

gamedd.sys
gamepad.sys
gamevdd.sys

These driver are available in one package called gamepad-xxxxxxx.zip where xxxxxxxx is the date of the latest package, available from _____.

Installing the Drivers

USBECD

To install the usbecd driver, first unzip usbecd23.zip to a directory of your choice.

Copy the USBECD.SYS file to your X:\OS2\BOOT\ directory (where X is your boot drive). Add the device driver to the CONFIG.SYS file as DEVICE=X:\OS2\BOOT\USBECD.SYS, below any USB related statements and restart your system.

Attach the usb game controller device that you want to control and it will be accepted by the device driver for inquiry via the DosRead function. From a command prompt, run the USBREAD.CMD file (contained in the same package) and it will obtain and display the device descriptor of the attached usb device and the device driver parameters required to control it. Update the device driver statement with the following:

```
DEVICE=USBECD.SYS /D:0000:0000:0000 /N:$$$$$$$ /S /V
```

where:

/D:0000:0000:0000 is the Vendor ID (idVendor):Product ID (idProduct):Device Release Number (bcdDevice) obtained by the USBREAD.CMD file.

example: /D:0583:2031:0110
(substitute the ID descriptors for your own device)

/N:\$\$\$\$\$\$\$ - Name, specifies the device driver name for this driver. Must be a valid device driver name that is unique and 8 characters or less (normally use \$6digits\$) It must be different from all other file, directory and driver names throughout your system. The driver accepts the file name characters used by the file system but not the space and dot characters.

examples of a valid name: /N:\$THRUST\$
(Note: this is just an example - you can make up one of your own if it complies with naming conventions above)

/V is an optional "verbose" switch, to show you the statement during a boot.

Save CONFIG.SYS and restart your system. If operating correctly and verbose is enabled, the driver statement with the parameters you entered into CONFIG.SYS will be shown during the reboot.

GAME CONTROLLER DRIVERS

The following experimental game controller drivers need to be installed next, in a directory of your choice:

gamedd.sys
gamepad.sys
gamevdd.sys

You can place your own custom PATH statement in CONFIG.SYS to direct the operating system to the drivers during boot-up, or place the drivers in a directory normally used by the operating system (eg. X:\OS2\MDOS)

Enter the device statements for the drivers above into CONFIG.SYS as follows:
(Assuming the device drivers have been placed in \OS2\MDOS in the example below)

```
DEVICE=X:\OS2\MDOS\GAMEDD.SYS  
DEVICE=X:\OS2\MDOS\GAMEPAD.SYS  
DEVICE=X:\OS2\MDOS\GAMEVDD.SYS
```

These driver statements must be placed below the USBECD statement and in the order above.

Save CONFIG.SYS and restart your system.

Running Tests

DOS Session setting :

XEVENTS.CMD must be running during any actual testing. XEVENTS is enabled by opening a windowed command prompt, changing to the directory where XEVENTS is located and typing XEVENTS and then enter.

XEVENTS will start in the window, showing a line of code. Pressing the various buttons and other controllers on your joystick should generate feedback in the form of additional code lines.

Leave XEVENTS running in the window, as you switch to the games you wish to test your game controller on. After testing is complete, you may switch to the open command prompt window and press key sequence Cntrl-C. This will end the XEVENTS program and generate an XEVENTS.LOG file, which will be found in the top, root directory of your operating system partition. This log may be sent to the developer for review upon request.

There are a variety of game related DOS session settings which may be set to assist in running a games program in a virtual DOS session, and you may need to experiment with them to get a legacy game running under a virtual DOS session (a good link related to these setting, with suggestions for various programs is located at:

<http://www.faqs.org/faqs/os2-faq/dos-games/part1/>

<http://www.faqs.org/faqs/os2-faq/dos-games/part2/>

Two setting directly related to running game controllers are listed below. As in ArcaOS no explanation is given as to the function of these settings, I have provided explanations found at the EDM/2 site for reference:

http://www.edm2.com/index.php/Input/Output_Device_Driver_Reference/Joystick_Device_Driver

GAME_DIRECT_ACCESS

OFF The default setting. This prevents the DOS program from talking directly to the game port and thus allows the joystick device driver to do its work.

ON This setting essentially disables the device driver by giving the DOS program direct access to the game port. You should only enable this setting if you are having problems with control of a DOS game and suspect that the joystick device driver may be at fault. This is also useful for testing the difference between having the device driver enabled and disabled for a particular game.

Based on current testing, this setting should always be OFF, unless you want to test game function without your game controller device involved.

GAME_DIGITAL_RESPONSE

ON The default setting. When this option is enabled, the device driver reports information back to the DOS program in such a way as to make your joystick look digital even if it is analog.

OFF Analog joysticks will look like analog joysticks.

If you are testing a legacy game controller that is analog in nature, it is suggested to turn this setting off as strange responses may be generated by the device within the game. If you are using a USB joystick or game pad (the majority of which are digital in nature) it is suggested to set this setting to ON first, during testing. If strange responses to your game controller occur, try this setting on OFF and see what happens.
