forum USB

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< Device Information ~ Beceem BCSM250 Mobile WiMAX modem 198f:bccd -> 198f:0220

Xander □Posted: Fri Feb 19, 2010 11:49 pm   quote

Joined: 19 Feb 2010
Posts: 7
Location: Russia

Hi!

I have successfully switched to the modem mode using this addition to udev rules:

```
Code:

 # Beceem BCSM250
 ATTRS{idVendor}=="198f", ATTRS{idProduct}=="bccd", RUN+="/usr/share/usb_modeswitch
 /usb_modeswitch.sh '%b/%k'"
```

and this config file:

```
Code:

 ####################################################
 # Beceem BCSM250

 DefaultVendor= 0x198f
 DefaultProduct=0xbccd

 TargetVendor=  0x198f
 TargetProduct= 0x0220

 CheckSuccess=20

 MessageEndpoint=2
 MessageContent="55534243f0298d8124000000800006bc626563324000000000000000000000"
```

MessageContent value was gathered using UsbSnoop.

Thank you!

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Josh □Posted: Sat Feb 20, 2010 1:07 am   quote

Site Admin
Joined: 02 Nov 2007
Posts: 1451

Cool, thanks!

I'll add the device to the configuration. If you give me a name (PM) I'll write it in as the contributor.

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Xander □Posted: Sat Feb 20, 2010 8:49 am   quote

Joined:
19 Feb
2010
Posts: 7
Location:
Russia

Sent it.

BTW, I noticed that after the switch an 'option' driver is binded to the device. And it seems that usb_modeswitch did it. However I'm quite sure that it should not be handled by an 'option' driver. Can I stop this somehow?

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Josh   Posted: Sat Feb 20, 2010 4:22 pm   quote

Site
Admin
Joined:
02 Nov
2007
Posts:
1451

If it provides serial interfaces, then the "option" is the way to go. It's and optimized driver for high-speed serial devices.

The generic serial USB driver is not recommended.

If there was a special driver for your device class, it would have been bound automatically. If the interfaces have a class of "255", this means vendor-specific and they are most likely serial ports.

You can check with a "lsusb -v -d 198f:0220". Look for "InterfaceClass".

To disable the driver loading, comment out line 319 in /lib/udev/usb_modeswitch (the "echo" command). I will add a proper switch in the next version.

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Xander   🔲 Posted: Sat Feb 20, 2010 7:19 pm   🔲 quote

Joined: Its class is indeed 0xff, but I'm quite sure that it isn't a usb-serial device. There is no working driver for it yet, but I
19 Feb   know the protocol partially.
2010
Posts: 7
Location:
Russia

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spoom   🔲 Posted: Wed Mar 17, 2010 8:29 am   🔲 quote

Joined:
17 Mar   Xander wrote:
2010
Posts: 1   Hi!

               I have successfully switched to the modem mode using this addition to udev rules:

```
Code:

# Beceem BCSM250
ATTRS{idVendor}=="198f", ATTRS{idProduct}=="bccd", RUN+="/usr/share
/usb_modeswitch/usb_modeswitch.sh '%b/%k'"
```

               and this config file:

```
Code:

#######################################################
# Beceem BCSM250

DefaultVendor= 0x198f
DefaultProduct=0xbccd

TargetVendor=  0x198f
TargetProduct= 0x0220

CheckSuccess=20

MessageEndpoint=2
MessageContent="55534243f0298d8124000000800006bc6265632400000000000000000000000000"
```

               MessageContent value was gathered using UsbSnoop.

               Thank you!

               Hi !

               I am new here so, please, can you write it down step by step the procedure? I just can't make it work under 9.10!
               Thank you!

               S.

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Josh	⧉ Posted: Wed Mar 17, 2010 10:01 am

Site
Admin
Joined:
02 Nov
2007
Posts:
1451

It's already included in the test version 1.1.1beta (see USB_ModeSwitch main page).

But - as Xander said - there is probably no driver yet, so switching is not really useful right now.

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GChriss	⧉ Posted: Tue Jul 06, 2010 5:07 am

Joined:
05 Jul
2010
Posts: 5

I have a Beceem Communications Inc. (198f:0220) / Sierra Wireless, Inc. (1199:0301) 250U card from Sprint.
Windows 7 reports the following newly-installed drivers:

Generic USB Hub
Sierra Wireless Device
Sierra Wireless Modem
Sierra Wireless DM Port (COM10)
Sierra Wireless CnS Port (COM9)
Sierra Wireless NMEA Port (COM7)
WiMAX Bus Driver
Sierra Wireless Network Adapter
WiMAX Network Adapter

Additional info is listed here: http://www.evdoforums.com/thread13930.html

I obtained a basic USB dump, but the supplied Sprint client appears to route traffic in some sort of non-USB manner
(serial?) after initial device setup. If the 250U doesn't act as a USB key, is USB_ModeSwitch necessary?

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Josh	⧉ Posted: Tue Jul 06, 2010 8:50 am

Site
Admin
Joined:
02 Nov
2007
Posts:
1451

I don't understand - are you asking about the Beceem or the Sierra ? These are two different devices, aren't they ?

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GChriss	⧉ Posted: Wed Jul 07, 2010 1:58 am

Joined:
05 Jul
2010
Posts: 5

This is a single, dual-mode USB modem with GPS capabilities. Documented here:

http://www.sierrawireless.com/productsandservices/AirCard/USBModems/aircard_250U.aspx

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Josh	⧉ Posted: Wed Jul 07, 2010 7:13 am

Site
Admin
Joined:
02 Nov
2007
Posts:

Ah, I see. There seem to be two chipsets included.

> GChriss wrote:
>   If the 250U doesn't act as a USB key, is USB_ModeSwitch necessary?

If you see a memory stick when plugging the device in Linux, you probably need to switch the mode somehow.

1451

For a definitive answer please post the output of "lsusb -v -d <inital-vendor-id>:<initial-product-id>" (run as superuser).

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GChriss Posted: Wed Jul 07, 2010 3:05 pm

Joined: Both 198f:0220 and 1199:0301 register simultanesouly upon plugin, but neither looks like USB mass storage.
05 Jul   Any ideas on how to connect to the internet with this device, or have Linux drivers simply not been developed?
2010
Posts: 5

lsusb -v -d 1199:0301

```
Code:

 Bus 003 Device 057: ID 1199:0301 Sierra Wireless, Inc.
 Device Descriptor:
   bLength                 18
   bDescriptorType          1
   bcdUSB                1.10
   bDeviceClass             0 (Defined at Interface level)
   bDeviceSubClass          0
   bDeviceProtocol          0
   bMaxPacketSize0         64
   idVendor            0x1199 Sierra Wireless, Inc.
   idProduct           0x0301
   bcdDevice             0.03
   iManufacturer            1 Sierra Wireless, Incorporated
   iProduct                 2 Sierra Wireless Device
   iSerial                  4 ☒4Vx????????
   bNumConfigurations       1
   Configuration Descriptor:
     bLength                 9
     bDescriptorType         2
     wTotalLength           81
     bNumInterfaces          1
     bConfigurationValue     1
     iConfiguration          0
     bmAttributes         0xa0
       (Bus Powered)
       Remote Wakeup
     MaxPower            500mA
     Interface Descriptor:
       bLength                 9
       bDescriptorType         4
       bInterfaceNumber        0
       bAlternateSetting       0
       bNumEndpoints           9
       bInterfaceClass       255 Vendor Specific Class
       bInterfaceSubClass    255 Vendor Specific Subclass
       bInterfaceProtocol    255 Vendor Specific Protocol
       iInterface              3 Data Interface
       Endpoint Descriptor:
         bLength                 7
         bDescriptorType         5
         bEndpointAddress     0x81  EP 1 IN
         bmAttributes            3
           Transfer Type          Interrupt
           Synch Type             None
           Usage Type             Data
```

```
            wMaxPacketSize     0x0010  1x 16 bytes
            bInterval              128
        Endpoint Descriptor:
          bLength                  7
          bDescriptorType          5
          bEndpointAddress      0x82  EP 2 IN
          bmAttributes             2
            Transfer Type            Bulk
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize        0x0040  1x 64 bytes
          bInterval                0
        Endpoint Descriptor:
          bLength                  7
          bDescriptorType          5
          bEndpointAddress      0x02  EP 2 OUT
          bmAttributes             2
            Transfer Type            Bulk
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize        0x0040  1x 64 bytes
          bInterval                0
        Endpoint Descriptor:
          bLength                  7
          bDescriptorType          5
          bEndpointAddress      0x84  EP 4 IN
          bmAttributes             2
            Transfer Type            Bulk
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize        0x0040  1x 64 bytes
          bInterval                0
        Endpoint Descriptor:
          bLength                  7
          bDescriptorType          5
          bEndpointAddress      0x04  EP 4 OUT
          bmAttributes             2
            Transfer Type            Bulk
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize        0x0040  1x 64 bytes
          bInterval                0
        Endpoint Descriptor:
          bLength                  7
          bDescriptorType          5
          bEndpointAddress      0x85  EP 5 IN
          bmAttributes             2
            Transfer Type            Bulk
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize        0x0040  1x 64 bytes
          bInterval                0
        Endpoint Descriptor:
          bLength                  7
          bDescriptorType          5
          bEndpointAddress      0x05  EP 5 OUT
          bmAttributes             2
            Transfer Type            Bulk
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize        0x0040  1x 64 bytes
          bInterval                0
```

```
        Endpoint Descriptor:
          bLength                 7
          bDescriptorType         5
          bEndpointAddress     0x88  EP 8 IN
          bmAttributes            2
            Transfer Type          Bulk
            Synch Type             None
            Usage Type             Data
          wMaxPacketSize     0x0040  1x 64 bytes
          bInterval               0
        Endpoint Descriptor:
          bLength                 7
          bDescriptorType         5
          bEndpointAddress     0x08  EP 8 OUT
          bmAttributes            2
            Transfer Type          Bulk
            Synch Type             None
            Usage Type             Data
          wMaxPacketSize     0x0040  1x 64 bytes
          bInterval               0
Device Status:     0x0000
  (Bus Powered)
```

lsusb -v -d 198f:0220

```
Code:
Bus 003 Device 058: ID 198f:0220 Beceem Communications Inc.
Device Descriptor:
  bLength                18
  bDescriptorType         1
  bcdUSB               2.00
  bDeviceClass          255 Vendor Specific Class
  bDeviceSubClass       255 Vendor Specific Subclass
  bDeviceProtocol       255 Vendor Specific Protocol
  bMaxPacketSize0        64
  idVendor           0x198f Beceem Communications Inc.
  idProduct          0x0220
  bcdDevice            0.01
  iManufacturer           1 Beceem Communications Inc.
  iProduct                2 Mobile WiMax SS
  iSerial                 3 MSB220
  bNumConfigurations      1
  Configuration Descriptor:
    bLength                 9
    bDescriptorType         2
    wTotalLength          111
    bNumInterfaces          1
    bConfigurationValue     1
    iConfiguration          0
    bmAttributes         0xa0
      (Bus Powered)
      Remote Wakeup
    MaxPower             500mA
    Interface Descriptor:
      bLength                 9
      bDescriptorType         4
```

```
                    bInterfaceNumber        0
                    bAlternateSetting       0
                    bNumEndpoints           6
                    bInterfaceClass       255 Vendor Specific Class
                    bInterfaceSubClass    255 Vendor Specific Subclass
                    bInterfaceProtocol    255 Vendor Specific Protocol
                    iInterface              0
                    Endpoint Descriptor:
                      bLength               7
                      bDescriptorType       5
                      bEndpointAddress    0x81  EP 1 IN
                      bmAttributes          2
                        Transfer Type          Bulk
                        Synch Type             None
                        Usage Type             Data
                      wMaxPacketSize    0x0040  1x 64 bytes
                      bInterval             1
                    Endpoint Descriptor:
                      bLength               7
                      bDescriptorType       5
                      bEndpointAddress    0x02  EP 2 OUT
                      bmAttributes          2
                        Transfer Type          Bulk
                        Synch Type             None
                        Usage Type             Data
                      wMaxPacketSize    0x0040  1x 64 bytes
                      bInterval             1
                    Endpoint Descriptor:
                      bLength               7
                      bDescriptorType       5
                      bEndpointAddress    0x83  EP 3 IN
                      bmAttributes          1
                        Transfer Type          Isochronous
                        Synch Type             None
                        Usage Type             Data
                      wMaxPacketSize    0x0000  1x 0 bytes
                      bInterval             1
                    Endpoint Descriptor:
                      bLength               7
                      bDescriptorType       5
                      bEndpointAddress    0x04  EP 4 OUT
                      bmAttributes          1
                        Transfer Type          Isochronous
                        Synch Type             None
                        Usage Type             Data
                      wMaxPacketSize    0x0000  1x 0 bytes
                      bInterval             1
                    Endpoint Descriptor:
                      bLength               7
                      bDescriptorType       5
                      bEndpointAddress    0x85  EP 5 IN
                      bmAttributes          3
                        Transfer Type          Interrupt
                        Synch Type             None
                        Usage Type             Data
                      wMaxPacketSize    0x0008  1x 8 bytes
                      bInterval             4
                    Endpoint Descriptor:
                      bLength               7
                      bDescriptorType       5
                      bEndpointAddress    0x06  EP 6 OUT
                      bmAttributes          3
```

```
            Transfer Type            Interrupt
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize     0x0008  1x 8 bytes
          bInterval                 4
      Interface Descriptor:
        bLength                  9
        bDescriptorType          4
        bInterfaceNumber         0
        bAlternateSetting        1
        bNumEndpoints            6
        bInterfaceClass        255 Vendor Specific Class
        bInterfaceSubClass     255 Vendor Specific Subclass
        bInterfaceProtocol     255 Vendor Specific Protocol
        iInterface               0
        Endpoint Descriptor:
          bLength                7
          bDescriptorType        5
          bEndpointAddress    0x81  EP 1 IN
          bmAttributes           2
            Transfer Type            Bulk
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize     0x0040  1x 64 bytes
          bInterval              1
        Endpoint Descriptor:
          bLength                7
          bDescriptorType        5
          bEndpointAddress    0x02  EP 2 OUT
          bmAttributes           2
            Transfer Type            Bulk
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize     0x0040  1x 64 bytes
          bInterval              1
        Endpoint Descriptor:
          bLength                7
          bDescriptorType        5
          bEndpointAddress    0x83  EP 3 IN
          bmAttributes           1
            Transfer Type            Isochronous
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize     0x0040  1x 64 bytes
          bInterval              1
        Endpoint Descriptor:
          bLength                7
          bDescriptorType        5
          bEndpointAddress    0x04  EP 4 OUT
          bmAttributes           1
            Transfer Type            Isochronous
            Synch Type               None
            Usage Type               Data
          wMaxPacketSize     0x0040  1x 64 bytes
          bInterval              1
        Endpoint Descriptor:
          bLength                7
          bDescriptorType        5
          bEndpointAddress    0x85  EP 5 IN
          bmAttributes           3
            Transfer Type            Interrupt
            Synch Type               None
```

```
            Usage Type              Data
        wMaxPacketSize      0x0008  1x 8 bytes
        bInterval                4
      Endpoint Descriptor:
        bLength                  7
        bDescriptorType          5
        bEndpointAddress     0x06  EP 6 OUT
        bmAttributes             3
          Transfer Type          Interrupt
          Synch Type             None
          Usage Type             Data
        wMaxPacketSize      0x0008  1x 8 bytes
        bInterval                4
  Device Qualifier (for other device speed):
    bLength                 10
    bDescriptorType          6
    bcdUSB                2.00
    bDeviceClass           255 Vendor Specific Class
    bDeviceSubClass        255 Vendor Specific Subclass
    bDeviceProtocol        255 Vendor Specific Protocol
    bMaxPacketSize0         64
    bNumConfigurations       1
  Device Status:     0x0000
    (Bus Powered)
```

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Josh	Posted: Wed Jul 07, 2010 4:24 pm	quote

Site
Admin
Joined:
02 Nov
2007
Posts:
1451

Wow!! You plug one device in and you get two IDs ?
That's something new!

Your lsusb output shows that there is no storage with drivers anywhere on the device. This means it's ready to use (sort of) and doesn't need a mode switch.

Does the device come with a driver CD ? If not, is Windows installing any drivers upon plug-in ?

Regarding Linux drivers: there is a good chance that you get the 3/4G part of the device running. Try this:

```
Code:
 # modprobe -v option
 # echo "1199 0301" > /sys/bus/usb-serial/drivers/option1/new_id
```

If you get some ttyUSB ports in /dev, try to connect using ttyUSB0 (or the lowest that was generated).

About the Beceem see the earlier post in this topic:
http://www.draisberghof.de/usb_modeswitch/bb/viewtopic.php?p=1940#1940

Funny "coincidence" on the Beceem web site - they are offering employment for someone able to write Linux USB drivers:
http://www.beceem.com/careers_jobs/host_driver_engineer_sc.html

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GChriss	Posted: Mon Jul 12, 2010 10:20 pm	quote

Joined:
05 Jul
2010
Posts: 5

There is nothing special that happens when you plug the modem into a Windows machine, unless you first ran the installation CD.

echo "1199 0301" did indeed register /dev/ttyUSB0 -- and no other ttyUSB* devices.

```
Code:

 wvdialconf /etc/wvdial.conf
 Editing `/etc/wvdial.conf'.

 Scanning your serial ports for a modem.

 ttyS0<*1>: ATQ0 V1 E1 -- failed with 2400 baud, next try: 9600 baud
 ttyS0<*1>: ATQ0 V1 E1 -- failed with 9600 baud, next try: 115200 baud
 ttyS0<*1>: ATQ0 V1 E1 -- and failed too at 115200, giving up.
 Modem Port Scan<*1>: S1    S2    S3
 WvModem<*1>: Cannot get information for serial port.
 ttyUSB0<*1>: ATQ0 V1 E1 -- OK
 ttyUSB0<*1>: ATQ0 V1 E1 Z -- OK
 ttyUSB0<*1>: ATQ0 V1 E1 S0=0 -- OK
 ttyUSB0<*1>: ATQ0 V1 E1 S0=0 &C1 -- OK
 ttyUSB0<*1>: ATQ0 V1 E1 S0=0 &C1 &D2 -- OK
 ttyUSB0<*1>: ATQ0 V1 E1 S0=0 &C1 &D2 +FCLASS=0 -- OK
 ttyUSB0<*1>: Modem Identifier: ATI -- Manufacturer: Sierra Wireless, Inc.
 ttyUSB0<*1>: Speed 9600: AT -- OK
 ttyUSB0<*1>: Max speed is 9600; that should be safe.
 ttyUSB0<*1>: ATQ0 V1 E1 S0=0 &C1 &D2 +FCLASS=0 -- OK

 Found a modem on /dev/ttyUSB0.
 Modem configuration written to /etc/wvdial.conf.
 ttyUSB0<Info>: Speed 9600; init "ATQ0 V1 E1 S0=0 &C1 &D2 +FCLASS=0"
```

My /etc/wvdial.conf file:

```
Code:
 [Dialer Defaults]
 Init1 = ATZ
 Init2 = ATQ0 V1 E1 S0=0 &C1 &D2 +FCLASS=0
 Modem Type = USB Modem
 Baud = 9600
 New PPPD = yes
 Modem = /dev/ttyUSB0
 ISDN = 0
 Carrier Check = no
 Stupid Mode = yes
 Phone = #777
 Username = ' '
 Password = ' '
```

Which then stalls on:

```
Code:
 wvdial
 --> WvDial: Internet dialer version 1.60
 --> Cannot get information for serial port.
 --> Initializing modem.
 --> Sending: ATZ
```

```
ATZ
OK
--> Sending: ATQ0 V1 E1 S0=0 &C1 &D2 +FCLASS=0
ATQ0 V1 E1 S0=0 &C1 &D2 +FCLASS=0
OK
--> Modem initialized.
--> Sending: ATDT#777
--> Waiting for carrier.
--> Timed out while dialing.  Trying again.
--> Sending: ATDT#777
--> Waiting for carrier.
ATDT#777
```

...so, any ideas on where to go from here? nm-applet also shows the device, but neither of the green orb indicators lights up.

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GChriss Posted: Tue Jul 13, 2010 12:46 am   quote

Joined: 05 Jul 2010
Posts: 5

...err, looks like the modem has already been de-activated as it is being returned.

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