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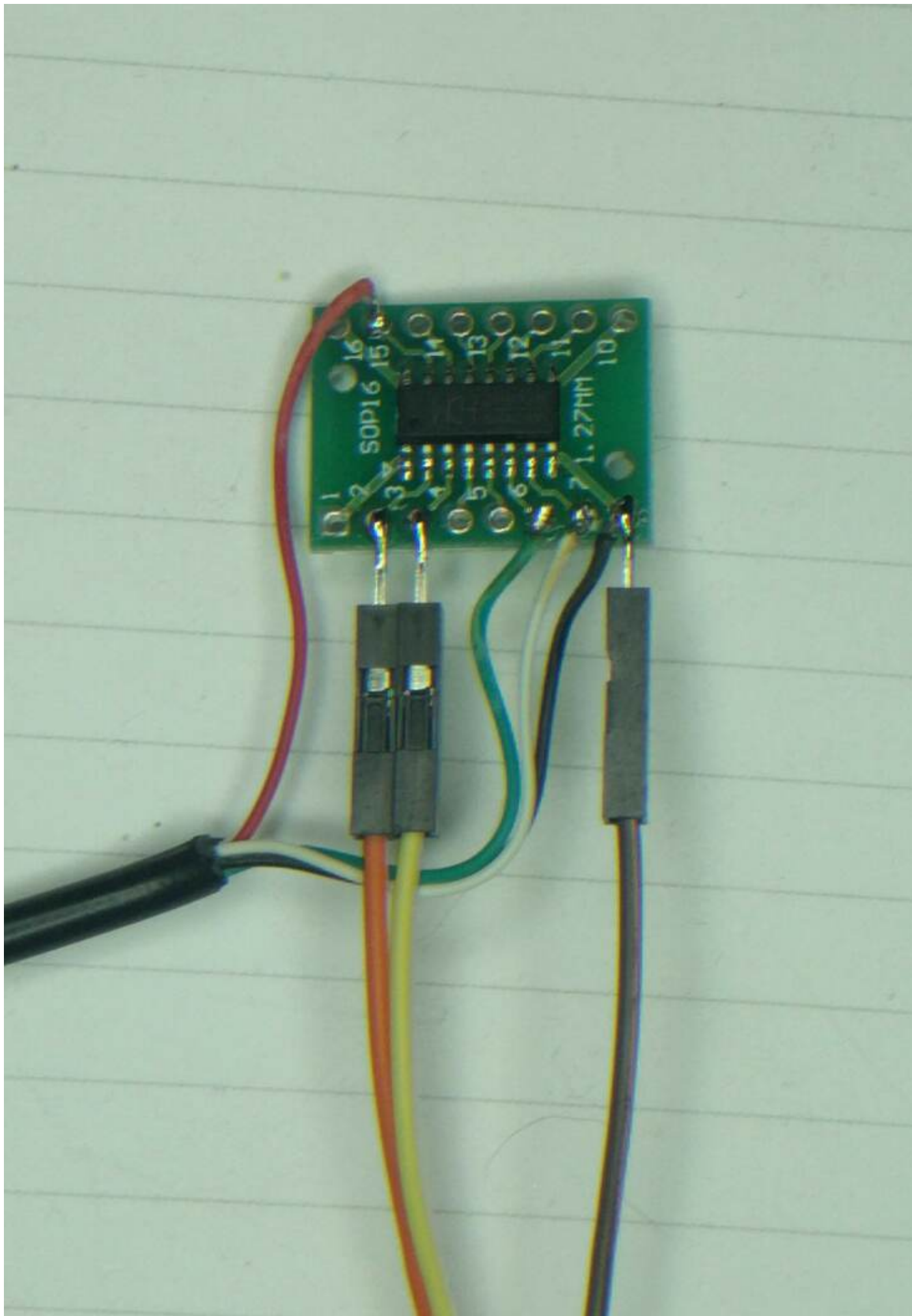
UART to USB 1.1 HID

I first learned about this chip from video <https://youtu.be/jJoD2ioJPP0>

## **chip on sop16 breakout**

Connecting only VCC, GND USB- and USB+ to target and UART RX, TG and GND to USB serial works without any additional components.





```

[2022258.670458] usb 1-5.2.3: new full-speed USB device number 41 using ehci-pci
[2022258.780644] usb 1-5.2.3: New USB device found, idVendor=1a86, idProduct=e010, bcdDevice=34.00
[2022258.780657] usb 1-5.2.3: New USB device strings: Mfr=1, Product=2, SerialNumber=3
[2022258.780663] usb 1-5.2.3: Product: HID To Serial
[2022258.780669] usb 1-5.2.3: Manufacturer: WCH.CN 4
[2022258.780674] usb 1-5.2.3: SerialNumber: 12345678
[2022258.791635] hid-generic 0003:1A86:E010.000D: hiddev3,hidraw3: USB HID v1.00 Device [WCH.CN 4

```

I does not create normal /dev/input device under Linux, but sending chars over serial at 9600 8n1 does produce output at /dev/hidraw3 device

```
dpavlin@x200:~$ microcom -s 9600 -p /dev/ttyUSB0
```

## lsusb

```
dpavlin@x200:~$ sudo lsusb -d 1A86:E010 -v
```

```
Bus 001 Device 041: ID 1a86:e010 QinHeng Electronics
```

```
Device Descriptor:
```

```

bLength                18
bDescriptorType        1
bcdUSB                 1.00
bDeviceClass           0
bDeviceSubClass        0
bDeviceProtocol        0
bMaxPacketSize0       8
idVendor               0x1a86 QinHeng Electronics
idProduct              0xe010
bcdDevice              34.00
iManufacturer          1 WCH.CN 4
iProduct               2 HID To Serial
iSerial                3 12345678
bNumConfigurations    1

```

```
Configuration Descriptor:
```

```

bLength                9
bDescriptorType        2
wTotalLength          0x0029
bNumInterfaces         1
bConfigurationValue    1
iConfiguration         4 (error)
bmAttributes           0x80
    (Bus Powered)

```

```
MaxPower                100mA
```

```
Interface Descriptor:
```

```

bLength                9
bDescriptorType        4
bInterfaceNumber       0
bAlternateSetting      0
bNumEndpoints          2
bInterfaceClass        3 Human Interface Device
bInterfaceSubClass     0
bInterfaceProtocol     0
iInterface              0

```

```
HID Device Descriptor:
```

```

bLength                9

```

```

    bDescriptorType      33
    bcdHID                1.00
    bCountryCode         0 Not supported
    bNumDescriptors      1
    bDescriptorType      34 Report
    wDescriptorLength    37
Report Descriptors:
  ** UNAVAILABLE **
Endpoint Descriptor:
  bLength                7
  bDescriptorType        5
  bEndpointAddress      0x82 EP 2 IN
  bmAttributes          3
    Transfer Type        Interrupt
    Synch Type           None
    Usage Type           Data
  wMaxPacketSize        0x0020 1x 32 bytes
  bInterval             1
Endpoint Descriptor:
  bLength                7
  bDescriptorType        5
  bEndpointAddress      0x02 EP 2 OUT
  bmAttributes          3
    Transfer Type        Interrupt
    Synch Type           None
    Usage Type           Data
  wMaxPacketSize        0x0020 1x 32 bytes
  bInterval             1
can't get debug descriptor: Resource temporarily unavailable
Device Status:          0x0000
  (Bus Powered)

```