# USB Driver

**MARVELL**®

# Driver Overview

- USB Driver Split into PC side and Device Side

- Device side matches PC side

- Current PC side driver is provided by SamSung

- Current Device side is developed by Marvell to cooperate with PC side driver.

# Drivers supported by Marvell MIFI

| PID | Description | Driver type composition | Use case | Group Comparison (reason) | remark |
|---|---|---|---|---|---|
| 0x6861 | integrated driver(RNDIS(#0,1) + UMS(#2) | RNDIS+UMS+ dynamic composition | MS Composite | | Samsung integrated driver |
| 0x6864 | integrated driver(RNDIS(#0,1)) | RNDIS+dynamic composition | MS Composite | | |

| PID | Description | Driver type composition | Use case | Group Comparison (reason) | remark |
|---|---|---|---|---|---|
| N/A | RNDIS Only | RNDIS | | | |
| N/A | ECM Only | ECM | | | |
| N/A | UMS Only | UMS | | | |

# Dynamic composition

- **Dynamic composition use the CDC-ACM Device Descriptor**

- **Enumerated as Modem in PC side**

- **3 endpoints for one device: 1 for control, 2 for data(RX/TX)**

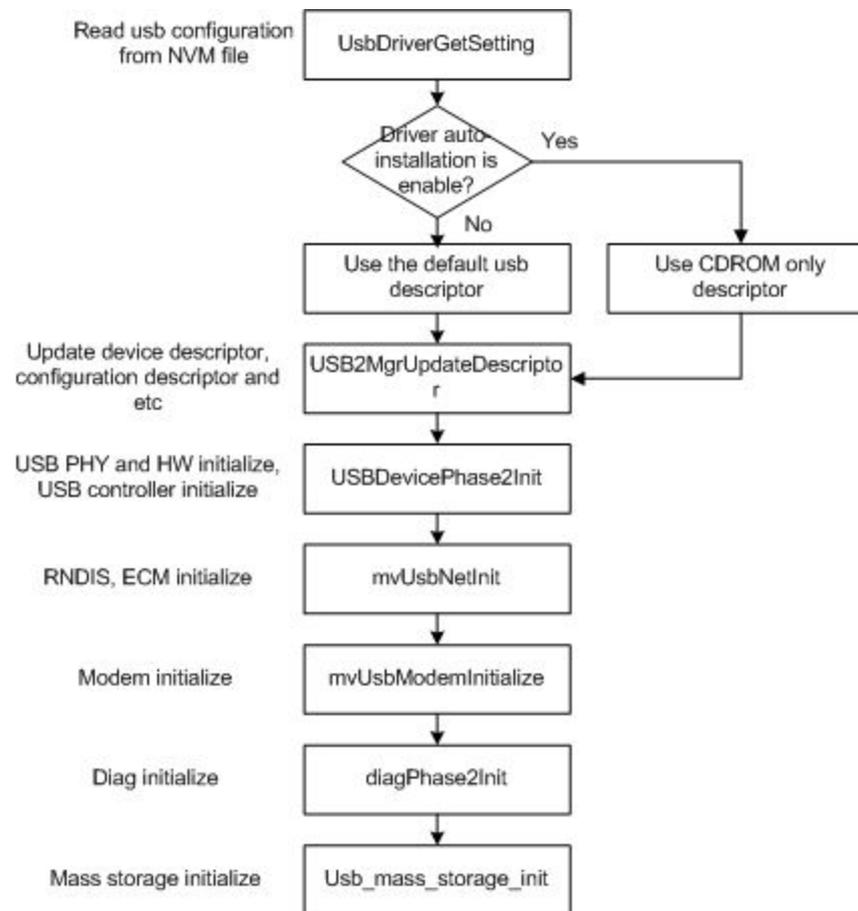- **2 Modems realized in current design: one for AT, one for Diag**

# RNDIS

- **Developed according to Microsoft RNDIS protocol**
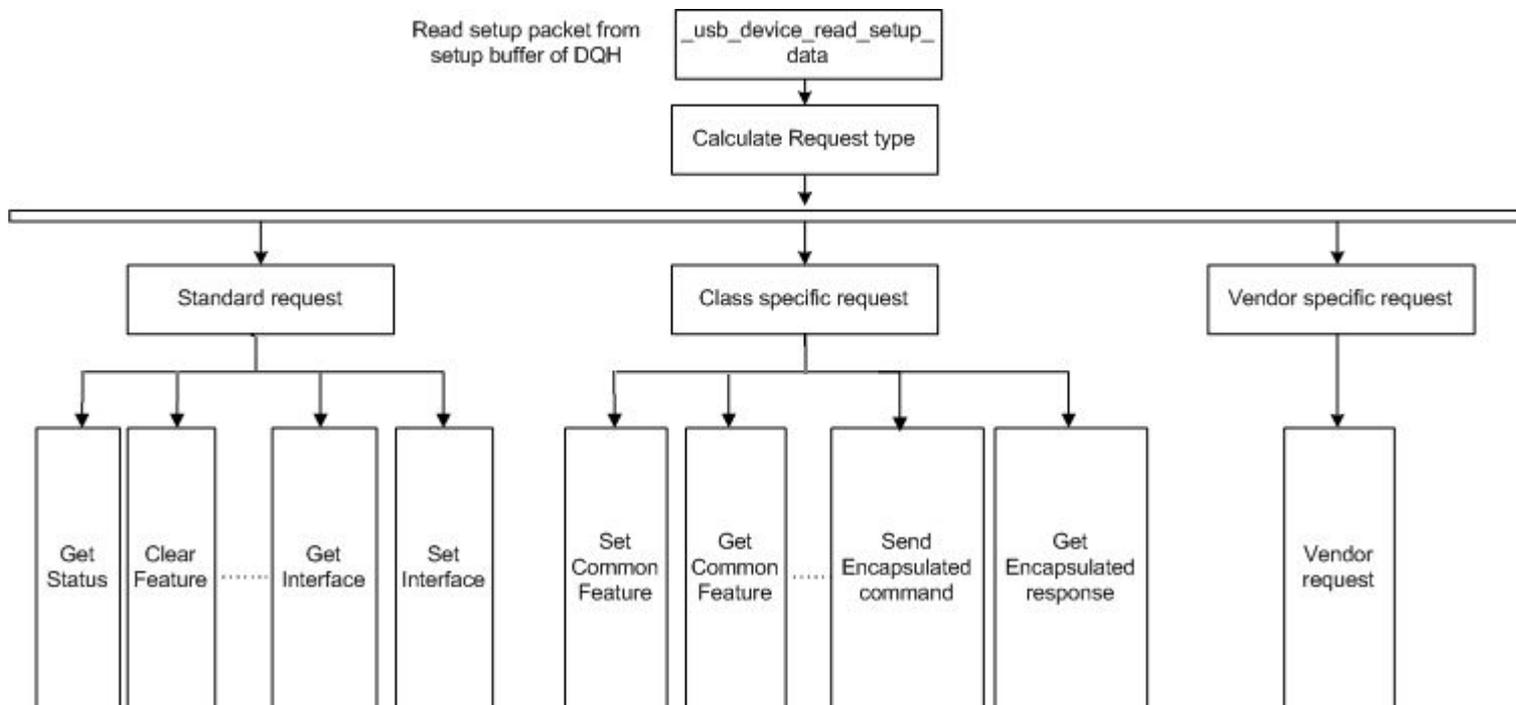- **3 endpoints for one device: 1 for control, 2 for data(RX/TX)**

5

# ECM

- Developed according to USB CDC-ECM protocol

- 3 endpoints for one device: 1 for control, 2 for data(RX/TX)

# USB Initialization process

# Setup packet process

# How to update USB descriptor

**Modify or add new descriptor in USB2MgrUpdateDescriptor.**

- Device descriptor.
- Configuration descriptor.
- String descriptor.

# How to configure Mass Storage

## Configure mass storage.

- The max logical unit number.
- The Start/End flash address.
- The media type of logical disc.
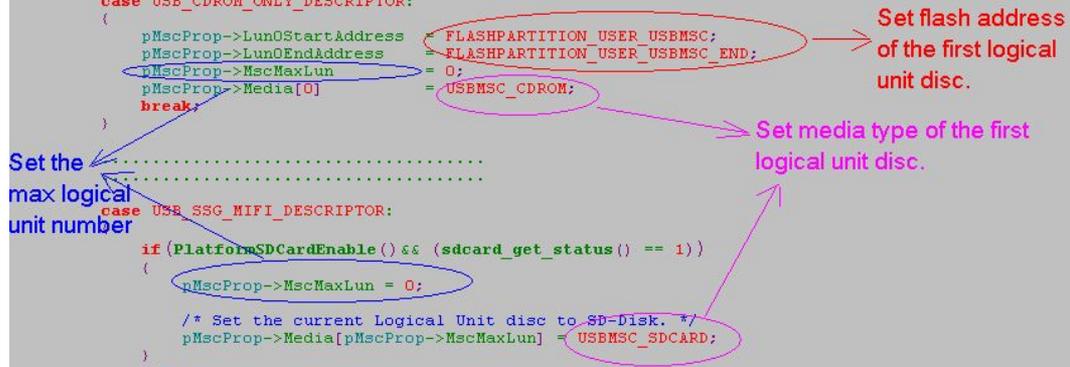- Enable/Disable Mass storage.

```c
void mvUsbStorageConfigure(void)
{
    mvUsbMscProperties_T *pMscProp = GetMscProperties();
    PlatformUsbDescType usbdesc = USB2ReconfigDescriptor();

    memset(pMscProp, 0x00, sizeof(mvUsbMscProperties_T));

    switch(usbdesc)
    {
        case USB_CDROM_ONLY_DESCRIPTOR:
        {
            pMscProp->Lun0StartAddress  = FLASHPARTITION_USER_USBMSC;
            pMscProp->Lun0EndAddress    = FLASHPARTITION_USER_USBMSC_END;
            pMscProp->MscMaxLun         = 0;
            pMscProp->Media[0]          = USBMSC_CDROM;
            break;
        }

        .........................................
        .........................................
        case USB_SSG_MIFI_DESCRIPTOR:
        {
            if(PlatformSDCardEnable() && (sdcard_get_status() == 1))
            {
                pMscProp->MscMaxLun = 0;

                /* Set the current Logical Unit disc to SD-Disk. */
                pMscProp->Media[pMscProp->MscMaxLun] = USBMSC_SDCARD;
            }
            else
            {
                usbCfg.mass_storage = MASS_STORAGE_DISABLE;
            }
            break;
        }

        .........................................
        .........................................

    } ? end switch usbdesc ?

    ASSERT(pMscProp->MscMaxLun < MSC_MAX_LUN);
} ? end mvUsbStorageConfigure ?
```

Set flash address of the first logical unit disc.

Set media type of the first logical unit disc.

Set the max logical unit number

# How to modify the flash address of mass storage

 Modify the flash address of every logical unit disc in flashpartition.h

11
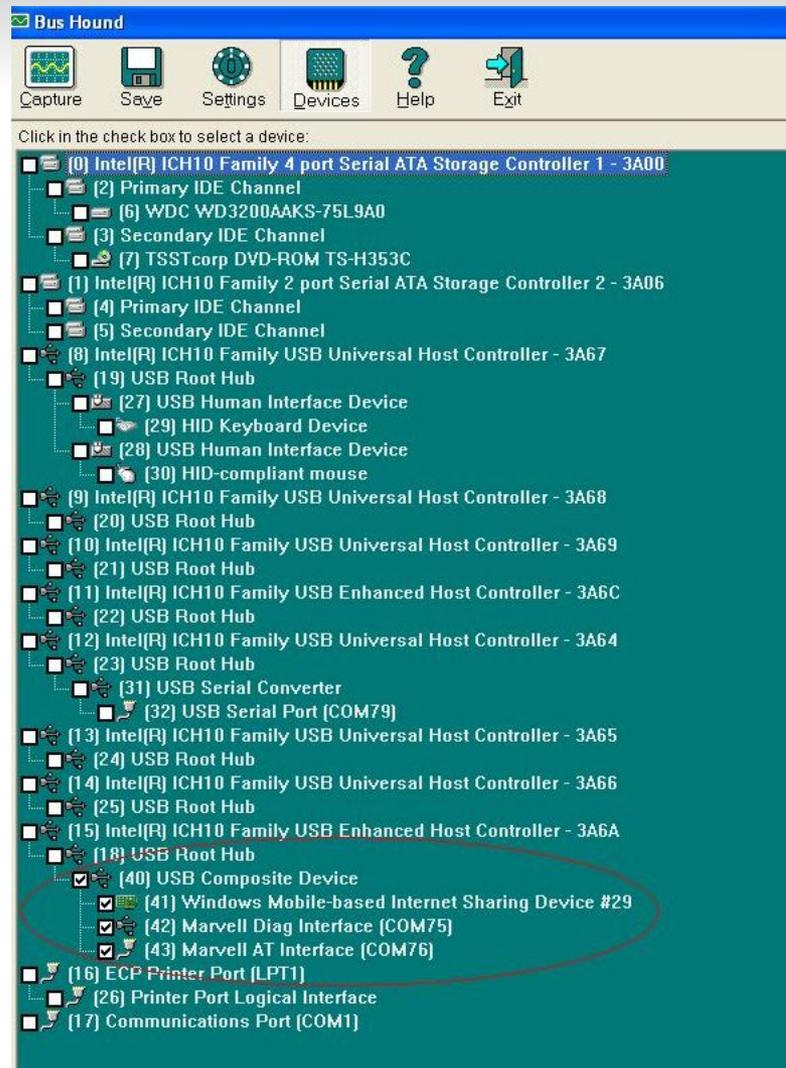
# Driver Auto-installation



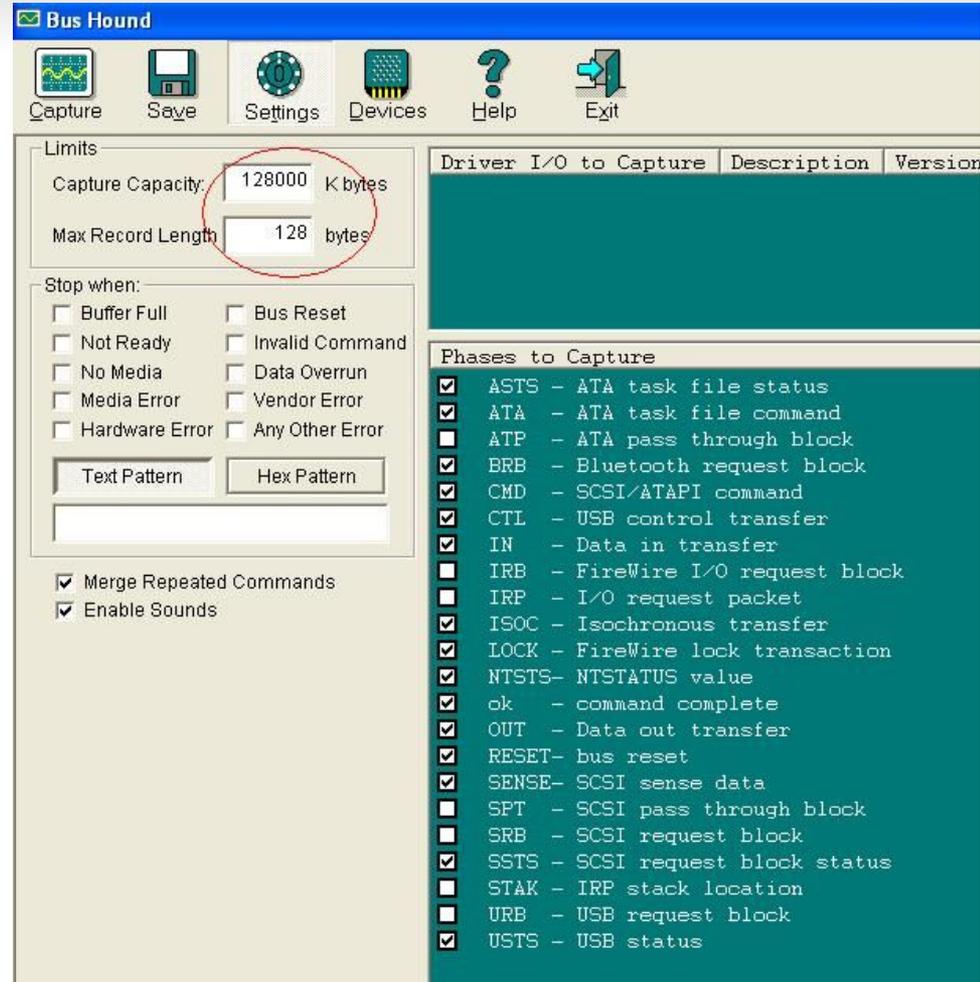Driver auto-installation flow chart

# Debug With Bushound

# How to capture bushound log

☐ **Select usb devices**

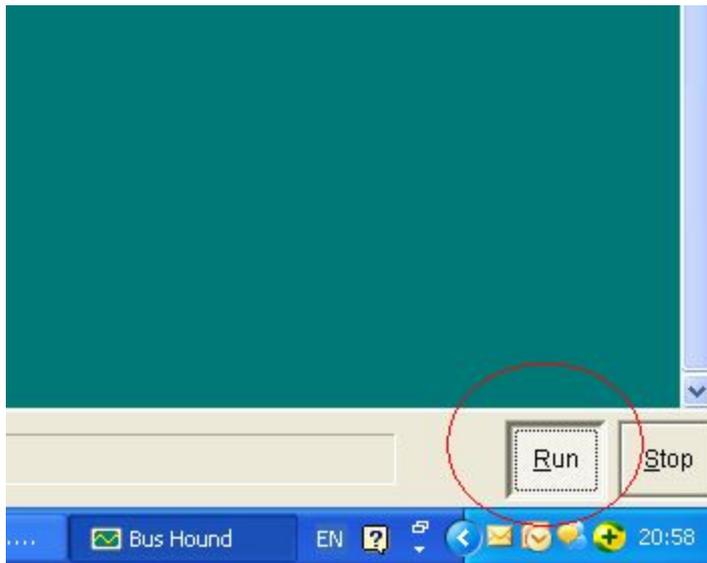# How to capture bushound log

- **Set "Capture Capacity".**
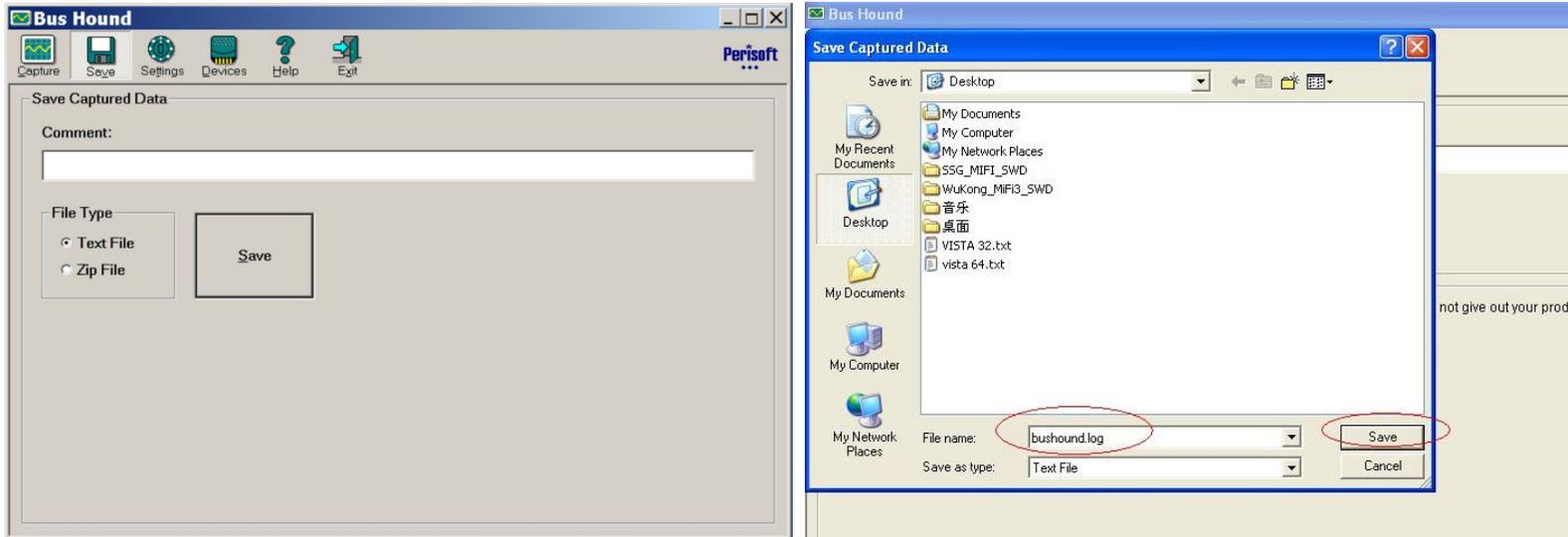- **Set "Max Record Length"**

# How to capture bushound log

- Click "run" button to start to capture log.

# How to capture bushound log

☐ **Save log**

# Thank You!