



MediaTek SOP for new flash support on Linux



Support new flash-1

- **Read FLASH datasheet**
 - Manufacture ID(mfr_id)
 - Device ID(dev_id)
 - Flash Size(DeviceSize)
 - Erase Block Size(EraseSize)
 - Operate Mode(mode)

Table 1. Additional Feature Comparison

Part Name	Protection and Security		Read Performance	Identifier			
	Flexible Block Protection (BP0-BP3)	512-bit secured OTP	2 I/O Read (50MHz)	Device ID (command: AB hex)	Device ID (command: 90 hex)	Device ID (command: EF hex)	RDID (command: 9F hex)
MX25L1605D	V	V	V	14 (hex)	C2 14 (hex) (if ADD=0)	C2 14 (hex) (if ADD=0)	C2 20 15 (hex)
MX25L3205D	V	V	V	15 (hex)	C2 15 (hex) (if ADD=0)	C2 15 (hex) (if ADD=0)	C2 20 16 (hex)
MX25L6405D	V	V	V	16 (hex)	C2 16 (hex) (if ADD=0)	C2 16 (hex) (if ADD=0)	C2 20 17 (hex)

Support new flash-2

- **bootloader**
 - File: bootrom/flash/spiflash.c
 - Fill flash's attribute into flash_tables[] arrays.

```
static struct spi_flash_info flash_tables[] = {
{
    mfr_id: MANUFACTURER_ST,
    dev_id: M25P64,
    name: "ST M25P64",
    DeviceSize: SIZE_8MiB,
    EraseSize: SIZE_64KiB,
    mode: SPI_STD_FAST_RD,
},
{
```

```
{
    mfr_id: MANUFACTURER_WINBOND,
    dev_id: W25Q32,
    name: "Winbond W25Q32",
    DeviceSize: SIZE_4MiB,
    EraseSize: SIZE_64KiB,
    mode: SPI_FAST_RD_QUAD_IO,
},
}
```

TC3162U at Thu Feb 4 18:01:03 CST 2010 version 0.8

Memory size 16MB

Found SPI Flash 4MiB Winbond W25Q32 at 0xbfc00000

Press any key in 3 secs to enter boot command mode.

bldr>

11.2.1 Manufacturer and Device Identification

MANUFACTURER ID	(MF7-MF0)	
Winbond Serial Flash	EFh	
Device ID	(ID7-ID0)	(ID15-ID0)
Instruction	ABh, 90h	9Fh
W25Q32BV	15h	4016h

Support new flash-3

- **Linux kernel**
 - File:2.6.21.5/driver/mtd/chips/spiflash_tc3162.c
 - Fill flash's attribute into flash_tables[] arrays.

```
{
    mfr_id: MANUFACTURER_WINBOND,
    dev_id: W25Q32,
    name: "Winbond W25Q32",
    DeviceSize: SIZE_4MiB,
    EraseSize: SIZE_64KiB,
},
{
```

```
TCP bind hash table entries: 512 (order: -1, 2048 bytes)
TCP: Hash tables configured (established 512 bind 512)
TCP reno registered
TC3162 hardware watchdog module loaded.
squashfs: version 3.0 (2006/03/15) Phillip Lougher
io scheduler noop registered (default)
ttyS0 at I/O 0xbfbf0003 (irq = 0) is a TC3162
RAMDISK driver initialized: 16 RAM disks of 4096K size 1024 blocksize
PPP generic driver version 2.4.2
PPP Deflate Compression module registered
PPP BSD Compression module registered
NET: Registered protocol family 24
tc3162: flash device 0x01000000 at 0x10000000
tc3162: Found SPIFLASH 4MiB Winbond W25Q32
Creating 5 MTD partitions on "tc3162":
0x00000000-0x00010000 : "bootloader"
0x00010000-0x00020000 : "romfile"
0x00020000-0x000ea97d : "kernel"
```

Support new flash-4

- Check the flash is support “Write Protection”(SST 25VF032B)
 - start_kernel→flash_init→spiflash_init→spiflash_probe

```
static int spiflash_probe(void)
{
    int i;
    unsigned long flash_id;

    flash_id = spiflash_read_id();

    for (i=0; i < (sizeof(flash_tables)/sizeof(struct spi_flash_info)); i++) {
        if ((MANUFACTURER_ID(flash_id) == flash_tables[i].mfr_id) &&
            (DEVICE_ID(flash_id) == flash_tables[i].dev_id)) {
            if (MANUFACTURER_ID(flash_id) == MANUFACTURER_SST) {
                spiflash_unlock();
                byte_program_mode = 1;
            }
            return i;
        }
    }
    return -1;
}
```