

## Linux DM9051 Driver r2502\_v3.9 driver information

### Updation List:

- A: For variated individual kernal version
  - o Tested in DM9051\_KERNEL\_5\_10/ DM9051\_KERNEL\_5\_15/ DM9051\_KERNEL\_6\_1/ DM9051\_KERNEL\_6\_6

An example:

```
#define KERNEL_BUILD_CONF DM9051_KERNEL_6_6
```

- B: Compatiable with lower speed connection
  - o Longer .tx\_timeout\_us make it adapt to 10Mbps lower speed networking
- C: Enhance rxb process
  - o Make sure to check rxb exactly
  - o Introduce the usage of SCAN\_BH(dw)
- \* D: Usage of struct driver\_config

An example:

- o Device= rpi5,
- o Run with
  - Interrupt mode (INT Clock out)
  - Encryption enable, enable
  - 16-bit mode
  - TX continue mode off
  - Checksum offload disable
  - Alignment mode enable

```
const struct driver_config confdata = {  
    .release_version = "Inx_dm9051_kt6631_r2502_v3.9",  
    .interrupt = MODE_INTERRUPT_CLKOUT,  
    .mid = MODE_A,  
    .mod = {  
    {  
        .test_info = "Test in rpi5 bcm2712",  
        .encpt_mode = FORCE_BUS_ENCPT_FAB_ON,  
        .encpt_pad = 0x00,  
        .skb_wb_mode = SKB_WB_ON,  
        .tx_mode = FORCE_TX_CONTI_OFF,
```

```

    .checksumming = DEFAULT_CHECKSUM_ON,
    .align = {
        .burst_mode = BURST_MODE_ALIGN,
        .tx_blk = 32,
        .rx_blk = 64
    }
},
// Additional configurations for other modes...
}
};

```

## Brief Functions List:

### (1) Interrupt support

- Interrupt
- Interrupt Clk out
- Polling

### (2) Alignment mode

- TX burst alignment
- RX burst alignment
- TX/RX burst full mode

Note: work around to dm9051\_write\_mem/dm9051\_read\_mem

for  
solve below issue:

```
"dw_axi_dmac_platform 1f0018000.dma: invalid buffer alignment.... "
```

Example: align\_config

```
.burst_mode = BURST_MODE_ALIGN, .tx_blk = 32, .rx_blk = 64
```

### (3) Enhance Random MAC address

- Provide 00:60:6e:xx:xx:xx RANDOM

### (4) RX Schedule delay configurable

- For polling mode
- Program control, POLL\_OPERATE\_NUM determine the usage of the iterated different delay times.

### (5) misc

- Monitor rxb, enable by FORCE\_MONITOR\_RXB

- Monitor rx packets, enable by FORCE\_MONITOR\_RX\_COUNT
- Monitor tx timeout condition, enable by FORCE\_MONITOR\_TX\_TIMEOUT