arm_dma_limit = 268435455 = 0x0fff,ffff

arm_dma_pfn_limit = 65535 = 0xffff

in arch/arm/mm/init.c

```
void __init setup_dma_zone(const struct machine_desc *mdesc)
{
#ifdef CONFIG_ZONE_DMA
	if (mdesc->dma_zone_size) {
		arm_dma_zone_size = mdesc->dma_zone_size;
		arm_dma_limit = PHYS_OFFSET + arm_dma_zone_size - 1;
	} else
		arm_dma_limit = 0xffffffff;
	arm_dma_pfn_limit = arm_dma_limit >> PAGE_SHIFT;
#endif
}
```

PHYS_OFFSET在Gr2 / Gs2上为zero.

in arch/arm/mach-pegmatite/pegmatatite.c

```
DT_MACHINE_START(PEGMATITE_DT, "Marvell Pegmatite (Device Tree)")
#ifdef CONFIG_SMP
	.smp		= smp_ops(pegmatite_smp_ops),
```

```
#endif
        .init_machine  = pegmatite_dt_init,
        .map_io        = pegmatite_map_io,
        .init_early = pegmatite_init_early,
        .init_irq    = pegmatite_init_irq,
        .init_time  = pegmatite_timer_and_clk_init,
        .restart    = pegmatite_restart,
        .dt_compat     = pegmatite_dt_compat,
#ifdef CONFIG_ZONE_DMA
        .dma_zone_size    = SZ_256M,
#endif
MACHINE_END
```

DMA空间的申请从physical RAM的低256M分配。

==========

high_memory = 0xef800000 (0xef800000 - 0xc0000000 = 0x2f800000 = 760M)

arm_lowmem_limit = 796917760 = 760M

max_mapnr = 262144 = 262144 * 4K = 1G

mem_map = 0xeefe7000

zero_pfn = 0

highest_memmap_pfn = 262143 = 1G - 1 page

max_low_pfn = 194560[0x2f800]   <--- NORMAL_ZONE的边界，760M

min_low_pfn = 0[0]

max_pfn = 262144[0x40000], 4G

in mm/page_alloc.c

unsigned long totalram_pages __read_mostly;

unsigned long totalreserve_pages __read_mostly;

totalram_pages = 257052[0x3ec1c] , total physical page is 0x40000, 少了0x13e4 （ 5092 pages，19.89M)

其中4M是给R4的ThreadX的。

totalreserve_pages = 0[0x0]