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1 RK3328 DDR模板和时序文件对应关系Correspondence between RK3328 DDR Template and Timing File

DDR 类型 DDR Type	片选数 Chip Select Number	支持容量 Support Capacity	板层 Board Layer	DDR 贴片方式 DDR SMT Method	最高频率 Highest Frequency	是否验证 Verified or Not	DDR 模板 DDR Template	DDR 时序文件(kernel-4.4) DDR Timing File(kernel-4.4)
DDR3 2x16bit	1	1GB	4	单面贴 Single-side SMT	933MHz	已验证 Verified	RK3328_DDR3P21 6SD4	rk3328-ddr3-1866-p216sd4- timing.dtsi
DDR3 4x16bit	2	2GB/1GB Compatible	4	双面贴 Double-side SMT	800MHz	已验证 Verified	RK3328_DDR3P41 6DD4	rk3328-ddr3-1600-p416sd4- timing.dtsi
DDR4 2x16bit	1	2GB/1GB Compatible	4	单面贴 Single-side SMT	1056MHz	已验证 Verified	RK3328_DDR4P21 6SD4	rk3328-ddr4-2133-p216sd4- timing.dtsi
LPDDR3 PIN178 1x32bit	2	2GB/1GB Compatible	4	单面贴 Single-side SMT	800MHz	已验证 Verified	RK3328_LPDDR3P1 32SD4	rk3328-dram-default-timing.dtsi
DDR4 4x16bit	2	4GB/3GB/2 GB Compatible	6	双面贴 Double-side SMT	996MHz	已验证 Verified	RK3328_DDR4P41 6DD6	rk3328-ddr4-2133-p416dd6- timing.dtsi

2 修改dts文件匹配对应的DDR模板Modify the Dts File to Match the Corresponding DDR Template

在 rk3328.dtsi 会包含默认的 rk3328-dram-default-timing.dtsi 的时序。如果 DDR 模板不是使用默认的时序，需要在 dts 文件中包含对应的 ddr 时序文件。

In the file rk3328.dtsi, it includes default timing file rk3328-dram-default-timing.dtsi. If the referenced DDR template is not the default timing, then it needs to include the corresponding DDR timing file in the dts file.

例如 DDR 模板采用 RK3328_DDR3P216SD4(使用什么 DDR 模板需要软件工程师和硬件工程师确认)，假设最后的 dts 文件为 rk3328-new.dts，通过在 rk3328-new.dts 包括该模板时序文件。

For example, the DDR template uses RK3328_DDR3P216SD4(which DDR template to use requires software engineers and hardware engineers to confirm). Assuming the final dts file is rk3328-new.dts, you need to include the timing file corresponding to the template in rk3328-new.dts

文件 rk3328-new.dts:

File rk3328-new.dts:

```
#include "rk3328.dtsi"

#include "rk3328-android.dtsi"

#include "rk3328-ddr3-1866-p416sd4-timing.dtsi"

#include <dt-bindings/input/input.h>
```