

confit.txt file

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1. Note
2. Device tree configuration
3. CPU frequency
4. IO initialization
5. Temperature control
6. Option filter

RDK uses a configuration file `config.txt` to set some system configurations at boot time. `config.txt` is read during the `uboot` phase and supports modifying the configuration of the device tree, IO pin status, ION memory, CPU frequency, etc.

This file is usually accessible from Linux as `/boot/config.txt` and must be edited as the `root` user.

If you configure settings in `config.txt`, but the file does not exist yet, just create it as a new text file.

1. Note

1. The `config.txt` configuration file is only applicable to the `RDK X3` and `RDK X3 Module` development boards, not to the `RDK ultra` development board.
2. The system version is not lower than `2.1.0`.
3. If you add filter items to this configuration file, please pay attention to whether the configuration items will be filtered out when using the `srpi-config` tool.

2. Device tree configuration

```
sunrise@ubuntu:/boot$ ls
boot.cmd boot.scr config config.txt hobot Image overlays
sunrise@ubuntu:/boot$
```

• dtdebug

`dtdebug` If non-zero, configuration logs will be output during the device tree configuration process at the `uboot` stage.

```
dtdebug=1
```

• dtoverlay

Support device tree overlay, providing a more flexible way to adjust the device tree.

For example, adjust the size of the `ION` memory through `ion_resize`. The following configuration will change the `ION` memory size to `1GB`.

```
dtoverlay=ion_resize,size=0x40000000
```

- **dtparam**

Supports enabling and disabling of uart, i2c, spi, i2s and other buses.

Currently supported option parameters: uart3, spi0, spi1, spi2, i2c0, i2c1, i2c2, i2c3, i2c4, i2c5, i2s0, i2s1

For example, to disable serial port 3.

```
dtparam=uart3=off
```

Eg, open `i2c5` :

```
dtparam=i2c5=on
```

3. CPU frequency

- **arm_boost**

When set to 1, overclocking is enabled. The maximum frequency of RDK v1.x is increased to 1.5GHz, and the maximum frequency of RDK V2.0 and RDK Module is increased to 1.8GHz.

By `cat /sys/devices/system/cpu/cpufreq/scaling_boost_frequencies` to get which higher CPU frequencies will be opened after enabling boost.

Overclocking is not enabled by default. It is enabled when `arm_boost` is set to `1`, for example.

```
arm_boost=1
```

- **governor**

The CPU frequency scheduling method can be selected by `conservative` `ondemand` `userspace` `powersave` `performance` `schedutil`.

The configurable modes can be obtained through `cat /sys/devices/system/cpu/cpufreq/scaling_available_governors`.

For example, to set `CPU` to run in performance mode.

```
governor=performance
```

- **frequency**

When `governor` is set to `userspace`, you can use this option to set `CPU` to run at a fixed frequency. Currently, you can generally set frequencies such as `240000` `500000` `800000` `1000000` `1200000` `1500000` `1800000`.

You can get the list of frequencies that can be set through `cat /sys/devices/system/cpu/cpufreq/scaling_available_frequencies`.

For example, set `CPU` to run at `1GHZ` with reduced frequency.

```
governor=userspace
frequency=1000000
```

4.IO initialization

- **gpio**

Support setting IO function multiplexing, output, output mode, output high, low level, pull-up and pull-down modes.

gpio:	
ip - Input	Set to input mode
op - Output	Set to output mode
f0-f3 - Func0-Func3	Set function reuse, f3 functions are all
set to io mode	
dh - Driving high (for outputs)	Output high level
dl - Driving low (for outputs)	Output low level
pu - Pull up	Push-pull pull-up
pd - Pull down	Push-pull pull-down
pn/np - No pull	No pull-up or pull-down

- **Example**

Configure **GPIO5** and **GPIO6** on the **40Pin** pin to IO mode.

```
gpio=5=f3
gpio=6=f3
# For continuous pins, you can also use the following configuration
gpio=5-6=f3
```

Configure **GPIO5** on the **40Pin** pin as input mode.

```
gpio=5=f3
gpio=5=ip
```

Configure **GPIO6** on the **40Pin** pin to output mode and output low level.

```
gpio=6=f3
gpio=6=op,dl
```

Configure **GPIO6** on the **40Pin** pin to output mode, output high level, and set pull-up.

```
gpio=6=f3
gpio=6=op,dl,pu
```

5. Temperature control

- **throttling_temp**

The system CPU and BPU frequency reduction temperature point.

When the temperature exceeds this point, the CPU and BPU will reduce their operating frequencies to reduce power consumption. The CPU will be reduced to 240MHz and the BPU will be reduced to 400MHz.

- **shutdown_temp**

System shutdown temperature point. If the temperature exceeds this point, the system will automatically shut down to protect the chip and hardware.

It is recommended to do a good job of heat dissipation for the device to avoid device shutdown, because the device will not automatically restart after shutdown.

6. Option filter

Supports using [] to set filter items. The filter item settings need to be added at the end of the configuration file, because the part of the file that does not have filter items added belongs to `all`.

Once the filter setting is added, the subsequent configuration only belongs to the filter attribute until the end of the configuration file or another filter item is set.

Currently supported filter items are distinguished by hardware model, and the following filter items are supported.

Filter Items	Suitable models
[all]	All hardware, default properties
[rdkv1]	RDK x3 v1.0, RDK x3 v1.1
[rdkv1.2]	RDK x3 v1.2
[rdkv2]	RDK x3 v2.1
[rdkmd]	RDK x3 Module