**make menuconfig 的作用：**以一种更友好的方式修改.config 文件

config_mini2440_td35：
友善之臂针对 TD35 液晶屏专门设计的配置文件，已经根据实际情况剔除了不必要的选项，如果采用官方 mini2440_defconfig 会有一些冗余的选项被选上。

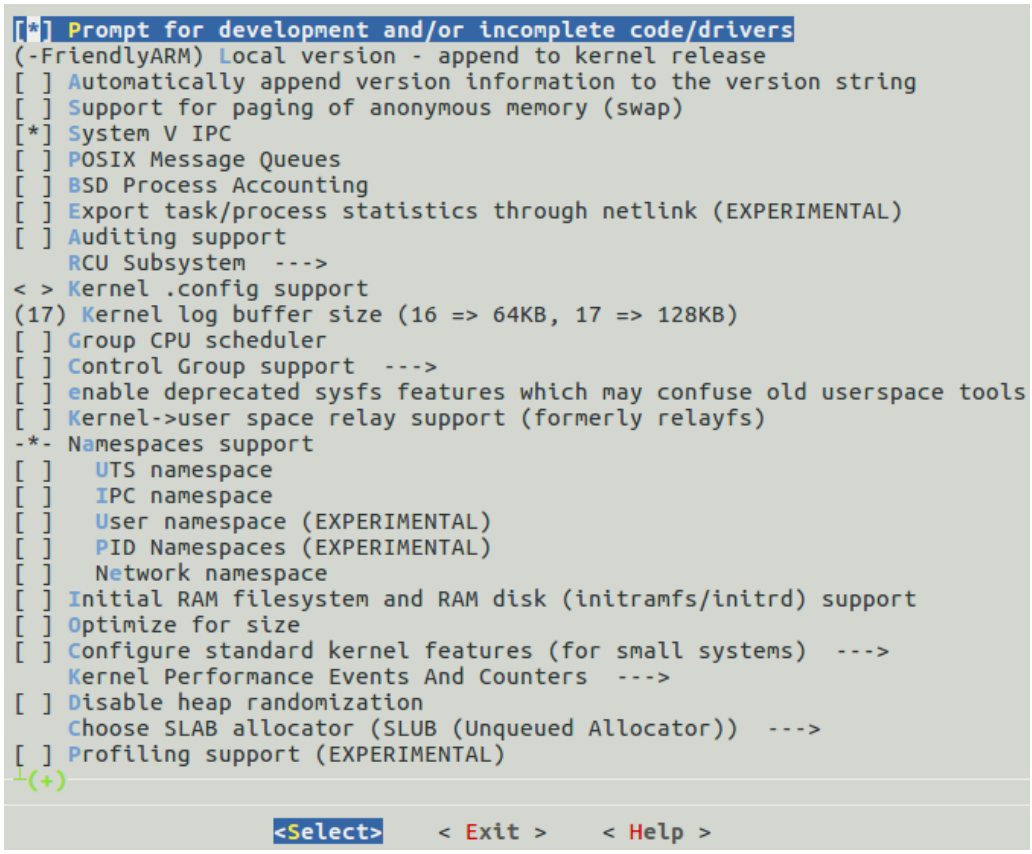
**勾选原则：**
< >:不需要的功能不选，减小内存占用
<*>:与内核功能紧密相关，选择编译入内核镜像中去
<M>:与内核其他部分关系不大，或者不经常使用的代码，编译成模块

**主菜单最后两项：**
1.加载一个可替换的配置文件：进入 make menuconfig 就会自动读取.config，也可以在此手动读取
2.保存一个可替换的配置文件：退出时会提醒是否存入.config，和在此手动保存效果一样
因此 make menuconfig 实际就是先读取再修改.config 文件
所以最好是在某个默认配置文件的基础上再按实际情况增加或减少一些模块。

**主菜单：**

```
    General setup  --->
[*] Enable loadable module support  --->
-*- Enable the block layer  --->
    System Type  --->
    Bus support  --->
    Kernel Features  --->
    Boot options  --->
    CPU Power Management  --->
    Floating point emulation  --->
    Userspace binary formats  --->
    Power management options  --->
[*] Networking support  --->
    Device Drivers  --->
    File systems  --->
    Kernel hacking  --->
    Security options  --->
-*- Cryptographic API  --->
    Library routines  --->
---
    Load an Alternate Configuration File
    Save an Alternate Configuration File
```

**1.常规设置**（版本信息、虚拟内存、进程间通信、系统调用等）

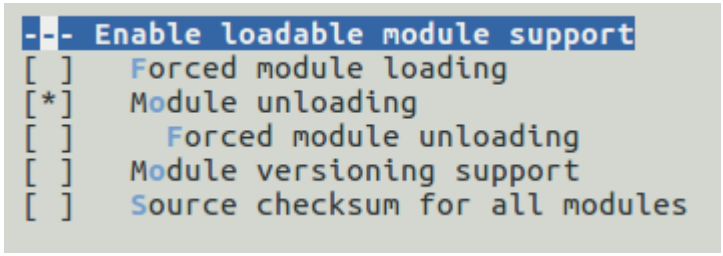



**[*]把开发中的代码/驱动的选项显示出来(必选)**
(-FriendlyARM)自定义版本
[ ]自动在版本字符串后面添加版本信息
[ ]支持交换分区 swap
**[*]V IPC(进程间通信相关)(必选)**
[ ]POSIX 消息队列(进程间通信相关)

(17)把内核的配置信息编译到内存中去

-*-命名空间的支持（这种---或-*-符号是不能改变勾选状态的意思）

**2.模块**




[ ]支持强制加载模块
**[*]支持模块卸载（必选）**
[ ]支持强制卸载模块
[ ]使用其他版本的内核模块(不选)
[ ]防止更改了模块代码而忘记改版本号造成冲突(不选)

**3.块设备**

```
-*- Enable the block layer
[ ]   Support for large (2TB+) block devices and files
[ ]   Block layer SG support v4
[ ]   Block layer data integrity support
      IO Schedulers  --->
```

[ ]支持大于 2TB 块设备
[ ]SASI 第四版的支持
[ ]块设备数据完整性支持
IO 调度器

**4.系统类型（选择 CPU、开发板类型等）**

```
[*] MMU-based Paged Memory Management Support
    ARM system type (Samsung S3C2410, S3C2412,
[ ] PWM device support
-*- S3C2410 DMA support
[ ]   S3C2410 DMA support debug
[ ] ADC common driver support
    *** Boot options ***
[ ] S3C Initialisation watchdog
[ ] S3C Reboot on decompression error
[*] Force UART FIFO on during boot process
    *** Power management ***
(0) S3C UART to use for low-level messages
(0) Space between gpio banks
    S3C2400 Machines  --->
    S3C2410 Machines  --->
    S3C2412 Machines  --->
    S3C2440 Machines  --->
    S3C2442 Machines  --->
    S3C2443 Machines  --->
    *** Processor Type ***
    *** Processor Features ***
[ ] Support Thumb user binaries
[ ] Disable I-Cache (I-bit)
[ ] Disable D-Cache (C-bit)
[ ] Force write through D-cache
```

**[*]支持页表内存管理（必选）**

-*-支持 DMA

**[*]在 boot 期间开启 UART FIFO**

**S3C2440 Machines --->里面要选择对应开发板 mini2440**

**5.总线**（默认即可）

```
< > PCCard (PCMCIA/CardBus) support  --->
```

**6.内核特性**（是否支持内核抢占、支持动态系统修改时间等）
**[*]EABI（文件系统相关）(必选)**
**[*]ABI（文件系统相关）(必选)**

```
    Memory split (3G/1G user/kernel split)  --->
    Preemption Model (No Forced Preemption (Server))  --->
[*] Use the ARM EABI to compile the kernel
[*]   Allow old ABI binaries to run with this kernel (EXPERIMENTAL)
[ ] High Memory Support (EXPERIMENTAL)
    Memory model (Flat Memory)  --->
[ ] Enable KSM for page merging
(4096) Low address space to protect from user allocation
[ ] Use kernel mem{cpy,set}() for {copy_to,clear}_user() (EXPERIMENTAL)
```

**7.bootloader 启动参数**（设置命令行参数等，默认即可）

```
(0) Compressed ROM boot loader base address
(0) Compressed ROM boot loader BSS address
()  Default kernel command string
[ ] Kernel Execute-In-Place from ROM
[ ] Kexec system call (EXPERIMENTAL)
```

**8.CPU 电源管理**

```
[ ] CPU Frequency scaling
[ ] CPU idle PM support
```

**9.浮点运算仿真器**（默认即可）

```
    *** At least one emulation must be selected ***
[*] NWFPE math emulation
[ ]   Support extended precision
[ ] FastFPE math emulation (EXPERIMENTAL)
```

**10.可执行文件格式**（一般选择 ELF）

```
[*] Kernel support for ELF binaries
[ ] Write ELF core dumps with partial segments
< > Kernel support for a.out and ECOFF binaries
< > Kernel support for MISC binaries
```

**[*]ELF 可执行文件格式（必选）**

**11.电源管理**

```
[ ] Power Management support
```

**12.网络**

```
-*- Networking support
      Networking options  --->
[ ]   Amateur Radio support  --->
< >   CAN bus subsystem support  --->
< >   IrDA (infrared) subsystem support  --->
< >   Bluetooth subsystem support  --->
< >   RxRPC session sockets
[*]   Wireless  --->
< >   WiMAX Wireless Broadband support  --->
< >   RF switch subsystem support  --->
< >   Plan 9 Resource Sharing Support (9P2000) (Experimental)  --->
```

网络选项--->
[]无线电支持（不选）
<>CAN 系统总线支持
<>红外线支持
<>蓝牙支持
<>会话套接字支持
[*]无线网络的支持
<>无线宽带的支持
<>RF 交换子系统
以下是网络选项子菜单：

```
<*> Packet socket
[ ]   Packet socket: mmapped IO
<*> Unix domain sockets
< > PF_KEY sockets
[*] TCP/IP networking
[ ]   IP: multicasting
[ ]   IP: advanced router
[*]   IP: kernel level autoconfiguration
[ ]     IP: DHCP support
[ ]     IP: BOOTP support
[ ]     IP: RARP support
< >   IP: tunneling
< >   IP: GRE tunnels over IP
[ ]   IP: ARP daemon support
[ ]   IP: TCP syncookie support (disabled per default)
< >   IP: AH transformation
< >   IP: ESP transformation
< >   IP: IPComp transformation
< >   IP: IPsec transport mode
< >   IP: IPsec tunnel mode
< >   IP: IPsec BEET mode
[ ]   Large Receive Offload (ipv4/tcp)
< >   INET: socket monitoring interface
[ ]   TCP: advanced congestion control  --->
[ ]   TCP: MD5 Signature Option support (RFC2385) (EXPERIMENTAL)
< >   The IPv6 protocol  --->
[ ] Security Marking
[ ] Network packet filtering framework (Netfilter)  --->
< > The DCCP Protocol (EXPERIMENTAL)  --->
└(+)
```

**其中子菜单的第一项：网络选项：**
**<*>Packet socket 是指应用程序直接和网络设备通信（一般选上）**

**<*>Unix socket（进程间通信可能会用到）(选上)**

**[*]TCP/IP 协议(必选)**

**[*]IP:内核启动时自动配置 IP 地址和路由表（选上）**

（选择最基本的网络配置即可，不需要太复杂的功能）

**13.设备驱动**

```
    Generic Driver Options  --->
< > Connector - unified userspace <-> kernelspace linker  --->
<*> Memory Technology Device (MTD) support  --->
< > Parallel port support  --->
[*] Block devices  --->
[ ] Misc devices  --->
< > ATA/ATAPI/MFM/RLL support  --->
    SCSI device support  --->
< > Serial ATA (prod) and Parallel ATA (experimental) drivers  --->
[ ] Multiple devices driver support (RAID and LVM)  --->
[*] Network device support  --->
[ ] ISDN support  --->
< > Telephony support  --->
    Input device support  --->
    Character devices  --->
<*> I2C support  --->
[ ] SPI support  --->
    PPS support  --->
-*- GPIO Support  --->
< > Dallas's 1-wire support  --->
< > Power supply class support  --->
< > Hardware Monitoring support  --->
< > Generic Thermal sysfs driver  --->
[*] Watchdog Timer Support  --->
    Sonics Silicon Backplane  --->
    Multifunction device drivers  --->
[ ] Voltage and Current Regulator Support  --->
<*> Multimedia support  --->
    Graphics support  --->
┴(+)
```

```
    Graphics support  --->
<*> Sound card support  --->
[*] HID Devices  --->
[*] USB support  --->
<*> MMC/SD/SDIO card support  --->
< > Sony MemoryStick card support (EXPERIMENTAL)  --->
-*- LED Support  --->
[ ] Accessibility support  --->
<*> Real Time Clock  --->
[ ] DMA Engine support  --->
[ ] Auxiliary Display support  --->
< > Userspace I/O drivers  --->
    TI VLYNQ  --->
[ ] Staging drivers  --->
```

**<*>MTD 支持（存储卡、nand flash 采用此技术）(必选)--->**

**[*]块设备支持(必选)--->**

**[*]网络设备支持(必选)--->**

**<*>I2C 支持--->**

**[*]开门狗支持(必选)--->**
**<*>多媒体支持（如摄像头）--->**

**<*>声卡支持--->**
**[*]HID 设置（USB 相关）--->**
**[*]USB 支持--->**
**<*>SD 卡支持--->**
**-*-LED 支持--->**
**<*>RTC 时间--->**

**14.文件系统**

```
< > Second extended fs support
< > Ext3 journalling file system support
< > The Extended 4 (ext4) filesystem
< > Reiserfs support
< > JFS filesystem support
< > XFS filesystem support
< > OCFS2 file system support
< > Btrfs filesystem (EXPERIMENTAL) Unstable disk format
< > NILFS2 file system support (EXPERIMENTAL)
[ ] Dnotify support
[ ] Inotify file change notification support
[ ] Inotify support for userspace
[ ] Quota support
< > Kernel automounter support
< > Kernel automounter version 4 support (also supports v3)
< > FUSE (Filesystem in Userspace) support
    Caches  --->
    CD-ROM/DVD Filesystems  --->
    DOS/FAT/NT Filesystems  --->
    Pseudo filesystems  --->
[*] Miscellaneous filesystems  --->
[*] Network File Systems  --->
    Partition Types  --->
-*- Native language support  --->
< > Distributed Lock Manager (DLM)  --->
```

<>EXT2
<>EXT3
<>EXT4

**[*]杂项文件系统（对于嵌入式）(必选)--->**
**[*]NFS（网络文件系统，用于挂载远程的文件系统）--->**

-*-本国语言支持--->

**其中子菜单杂项文件系统：**

**<*>YAFFS2 文件系统支持**

**[*]自动选择 yaffs2 格式**

[*]在 RAM 中缓存短名称

```
--- Miscellaneous filesystems
< >   ADFS file system support (EXPERIMENTAL)
< >   Amiga FFS file system support (EXPERIMENTAL)
< >   Apple Macintosh file system support (EXPERIMENTAL)
< >   Apple Extended HFS file system support
< >   BeOS file system (BeFS) support (read only) (EXPERIMENTAL)
< >   BFS file system support (EXPERIMENTAL)
< >   EFS file system support (read only) (EXPERIMENTAL)
<*>   YAFFS2 file system support
-*-     512 byte / page devices
[ ]       Use older-style on-NAND data format with pageStatus byte
[ ]         Lets Yaffs do its own ECC
-*-     2048 byte (or larger) / page devices
[*]       Autoselect yaffs2 format
[ ]       Disable YAFFS from doing ECC on tags by default
[ ]       Disable lazy loading
[ ]     Turn off wide tnodes
[ ]     Force chunk erase check
[*]     Cache short names in RAM
[ ]     Empty lost and found on boot
< >   Journalling Flash File System v2 (JFFS2) support
< >   Compressed ROM file system support (cramfs)
< >   SquashFS 4.0 - Squashed file system support
< >   FreeVxFS file system support (VERITAS VxFS(TM) compatible)
< >   Minix file system support
< >   SonicBlue Optimized MPEG File System support
< >   OS/2 HPFS file system support
< >   QNX4 file system support (read only)
< >   ROM file system support
└(+)
```

**15.内核调试**

```
[ ] Show timing information on printks
[ ] Enable __deprecated logic
[ ] Enable __must_check logic
(1024) Warn for stack frames larger than (needs gcc 4.4)
[ ] Magic SysRq key
[ ] Strip assembler-generated symbols during link
[ ] Enable unused/obsolete exported symbols
[ ] Debug Filesystem
[ ] Run 'make headers_check' when building vmlinux
[ ] Kernel debugging
[ ] SLUB debugging on by default
[ ] Enable SLUB performance statistics
[ ] Check for stalled CPUs delaying RCU grace periods
[ ] Latency measuring infrastructure
[ ] Sysctl checks
[ ] Tracers  --->
[ ] Sample kernel code  --->
[ ] Enable stack unwinding support
[ ] Verbose user fault messages
(0) S3C UART to use for low-level debug
```

**16.安全选项**

```
[ ] Enable access key retention support
[ ] Enable different security models
[ ] Enable the securityfs filesystem
[ ] File POSIX Capabilities
```

**17.加密 API 函数**

```
-*- Cryptographic API
        *** Crypto core or helper ***
-*-     Cryptographic algorithm manager
< >     GF(2^128) multiplication functions (EXPERIMENTAL)
< >     Null algorithms
< >     Software async crypto daemon
< >     Authenc support
< >     Testing module
        *** Authenticated Encryption with Associated Data ***
< >     CCM support
< >     GCM/GMAC support
< >     Sequence Number IV Generator
        *** Block modes ***
< >     CBC support
< >     CTR support
< >     CTS support
-*-     ECB support
< >     LRW support (EXPERIMENTAL)
< >     PCBC support
< >     XTS support (EXPERIMENTAL)
        *** Hash modes ***
< >     HMAC support
< >     XCBC support
< >     VMAC support
        *** Digest ***
< >     CRC32c CRC algorithm
< >     GHASH digest algorithm
< >     MD4 digest algorithm
< >     MD5 digest algorithm
└(+)
```

**18.库的子程序**（CRC 校验、压缩函数等库）

```
-*- CRC-CCITT functions
< > CRC16 functions
< > CRC calculation for the T10 Data Integrity Field
{*} CRC ITU-T V.41 functions
-*- CRC32 functions
< > CRC7 functions
< > CRC32c (Castagnoli, et al) Cyclic Redundancy-Check
```