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**System Setting**

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目录

[1 需求概述/ Requirement Overview 4](#_Toc65156441)

[1.1 背景价值/Background Information 4](#_Toc65156442)

[2 需求列表/Requirement List 4](#_Toc65156443)

[3 需求描述/Requirement Description 5](#_Toc65156444)

[3.1 音效设置/EQ Setting 5](#_Toc65156445)

[3.1.1 均衡器设置/Equalizer Setting 5](#_Toc65156446)

[3.1.2 平衡/衰减 / Balance / Fade 7](#_Toc65156447)

[3.1.3 声场模式/Sound Field Mode 7](#_Toc65156448)

[3.2 时间和日期/Time and Date 8](#_Toc65156449)

[3.2.1 12小时/24小时制选择 24-hour /12-hour System Option 8](#_Toc65156450)

[~~3.2.2 手动设置时间/Manual Time Setting~~ 8](#_Toc65156451)

[3.2.3 同步GPS时间/Synchronizing GPS Time 9](#_Toc65156452)

[3.2.4 年月日设置/ Y/M/D Setting 10](#_Toc65156453)

[3.3 系统声音设置/System Sound Setting 11](#_Toc65156454)

[3.3.1 自动音效调整/Automatic Sound Adjustment 11](#_Toc65156455)

[~~3.3.2 速度音量补偿/Speed Volume Compensation~~ 11](#_Toc65156456)

[3.3.3 警示音设置/Warning Tone Setting 11](#_Toc65156457)

[3.3.4 最大启动音量设置/Maximum Startup Volume Setting 12](#_Toc65156458)

[3.3.5 音频通道音量调整/Audio Channel Volume Adjustment 12](#_Toc65156459)

[3.4 语言设置/Language Setting 13](#_Toc65156460)

[3.5 语音识别设置/Voice Recognition Setting 14](#_Toc65156461)

[3.5.1 语音识别设置内容（全平台含Cadi车型） 14](#_Toc65156462)

[3.5.2 机舱模式触发语音识别设置联动~~（TBD）~~ 14](#_Toc65156463)

[~~3.6 输入法设置~~ 15](#_Toc65156464)

[3.7 蓝牙设置/Bluetooth Setting 15](#_Toc65156465)

[3.8 显示设置/Display Setting 15](#_Toc65156466)

[~~3.8.1 视频显示调整/Video Display Adjustment~~ 15](#_Toc65156467)

[~~3.8.2 Camera 设置/Camera Setting~~ 16](#_Toc65156468)

[3.8.3 仪表与HUD设置/Instrument and HUD Setting 16](#_Toc65156469)

[3.8.4 中控显示设置/Centre Console Display Setting 17](#_Toc65156470)

[~~3.9 电话呼叫设置~~ 18](#_Toc65156471)

[3.10 声音反馈设置/Sound Feedback Setting 18](#_Toc65156472)

[3.11 恢复出厂设置/Restore to Factory Settings 19](#_Toc65156473)

[3.12 开源许可证/Open-source License 20](#_Toc65156474)

[~~3.13 车牌号设置~~ 20](#_Toc65156475)

[~~3.14 Apple Carplay~~ 20](#_Toc65156476)

[3.15 软件更新/Software Update 20](#_Toc65156477)

[~~3.16 壁纸设置/Wallpaper Setting~~ 20](#_Toc65156478)

[3.17 多功能按键/Multi-Function Button（仅458项目） 21](#_Toc65156479)

[3.18 V2X设置/V2X Setting 22](#_Toc65156480)

[3.18.1 仅458项目/only 458 item 22](#_Toc65156481)

[3.18.2 仅GB BUICK项目 22](#_Toc65156482)

[3.19 Dimming调节（仅针对458项目）/Dimming(Only for 458) 23](#_Toc65156483)

[4 系统需求/System Requirements 24](#_Toc65156484)

[4.1 互联与账号相关/Interconnection and Account-related 24](#_Toc65156485)

[4.2 支持Global Search 25](#_Toc65156486)

[4.3 版本升级/Version Upgrade 25](#_Toc65156487)

[4.4 埋点需求/Event Tracking Requirement 25](#_Toc65156488)

[4.5 相关CAN信号/Related CAN Signals 25](#_Toc65156489)

[4.6 相关标定项/Related Calibration Items 25](#_Toc65156490)

[5 附录/Appendix 25](#_Toc65156491)

[**Revision Log** 26](#_Toc65156492)

# 需求概述/ Requirement Overview

## 背景价值/Background Information

本文档定义系统设置相关要求，本文档中所有的设置项，在车辆异常重启或者刷新后，仍然能保留用户做过的设置。

This document defines the relevant requirements for system settings. All the settings in this document can still retain the set value made by the user after the vehicle is restarted abnormally or refreshed.

本文档中的所有标有“全平台”的章节，需要在VCS平台上的所有车型上支持，即VCS Cadi车型China Unique需求。本文档中未标注章节仅适用于VCS Buick车型。

All sections in this document marked "The Whole Platform" are for VCS Cadi model China Unique requirements. The unmarked sections in this document apply only to VCS Buicks.

~~本文档仅适用于VCS Buick车型以及U458项目。~~

~~This document only suitable for VCS Buick and U458 program.~~

# 需求列表/Requirement List

|  |  |  |
| --- | --- | --- |
| Subfeature | Description | Priority |
| 音效设置  EQ Setting |  | 3 |
| 时间和日期  Time and Date |  | 3 |
| 系统声音设置  System Sound Setting |  | 3 |
| 语言设置  Language Setting |  | 3 |
| 语音识别设置  Voice Recognition Setting |  | 3 |
| 蓝牙设置  Bluetooth Setting |  | 3 |
| 显示设置  Display Setting |  | 3 |
| 恢复出厂设置  Restore to Factory Settings |  | 3 |
| 开源许可证  Open-source License |  | 3 |
| 多功能按键  Multi-Function Buttons |  | 3 |
| V2X设置  V2X Setting |  | 3 |
| Apple Carplay |  | 3 |
| 软件更新  Software Update |  | 3 |
| 壁纸设置  Wallpaper Setting |  | 3 |

# 需求描述/Requirement Description

本文档定义了当前车辆需要支持的娱乐系统设置项。本文档中所有的设置项，在汽车异常重启或者刷新后，仍然能保留用户做过的设置。

This document defines the entertainment system settings that the current vehicle needs to support. All the settings in this document can still retain the set value made by the user after the vehicle is restarted abnormally or refreshed.

## 音效设置/EQ Setting

### 均衡器设置/Equalizer Setting

本系统允许用户在一定范围内调节低音（Bass），中音（Midrange），高音（Treble）的声音强度。低音，中音，高音都要能调节，调节范围为正负12 step。~~具体step个数请参考PISXXXX。~~每个step和音量dB的对应关系请参考系统设计文档。当从其它step调整到step 0时（step 0是中间值），要在step 0处停顿0.2秒，让用户感受到step归0。低音，中音和高音出厂默认设置step是 step 0.

This system allows the user to adjust the sound intensity of Bass, Midrange and Treble within a certain range. Bass, Midrange, and Treble must be adjustable. ~~Please refer to PISXXXX~~ for the number of steps. And for the correspondence between each step and volume dB, please refer to system design documents. When adjusting from any other step to step 0 (step 0 is the middle value), it shall pause for 0.2 seconds to let the user feel that it is step 0. The factory default settings for Bass, Midrange and Treble are step 0.

~~本系统支持5个预设的EQ风格和1个自定义（Manual）风格供用户选择。5个EQ预设风格分别是：人声（Talk）, 摇滚（Rock）, 爵士（Jazz）, 流行（Pop）和古典（Classical）。这5个预设EQ风格都分别对应一组固定的低音（Bass）,中音（Midrange）和高音（Treble）的调节值，每个预设风格对应的低音（Bass），中音（Midrange），高音（Treble）值请参考系统设计文档。用户可以选择任意一个EQ风格，从而达到选择了一组低音，中音和高音组合调节值的效果。~~

~~The system supports 5 preset EQ styles and 1 Manual style for users to choose. The five EQ preset styles are: Talk, Rock, Jazz, Pop, and Classic. The five preset EQ styles correspond to a set of fixed Bass, Midrange and Treble adjustment values respectively. For relevant Bass, Midrange and Treble values, please refer to system design documents. The user can select any EQ style to achieve the effect of selecting a set of Bass, Midrange and Treble adjustment values.~~

~~自定义（Manual）风格是指用户可以自定义一组低音（Bass），中音（Midrange），高音（Treble）值。自定义（ Manual）EQ风格的低音, 中音和高音的出厂默认值都是 step 0. 当用户调整了自定义的中高低音时，用户的设置应被记住，以便切换预设EQ后，再次切回自定义时，能够回到之前设置的状态。系统支持用户在自定义风格中调整自定义EQ风格，或以预设为基础进行调整后设置为自定义。~~

~~The Manual style means that the user can self-define a set of Bass, Midrange, and Treble values. The factory defaults of Bass, Midrange and Treble for Manual EQ style are step 0. When the user adjusts the self-defined Bass, Midrange and Treble, the user's settings should be remembered so that the user can return to the state previously set when switching back from the preset EQ styles to Manual style again. The system allows the user to adjust the Manual EQ style in the Manual style, or adjust it to Manual based on the presetting.~~

~~系统需要根据标定判断当前车辆是否支持外置功放或自主调音，当车辆支持外置功放或自主调音时，系统不支持预设EQ，仅提供自主调音的EQ供用户选择。自主EQ与低中高音无对应关系。具体请参考系统设计文档。~~

~~The system should judge whether the current vehicle supports external power amplifier or self-tuning according to the calibration. If yes, the system does not support preset EQ, but only provides self-tuning EQ for users to select. There is no correspondence between self-tuning EQ and Bass, Midrange and Treble. Please refer to system design documents for details.~~

### 平衡/衰减 / Balance / Fade

本系统允许用户在一定范围调节声音在车内[空间](http://zhidao.baidu.com/search?word=%E7%A9%BA%E9%97%B4%E4%BD%8D%E7%BD%AE&fr=qb_search_exp&ie=utf8" \t "_blank)的强弱平衡。

The system allows the user to adjust the balance of sound inside the vehicle within a certain range.

Balance：左右平衡，是指调节声音在车左部（Left）和车右部（Right）空间强弱平衡的参数。

Balance: Left/right balance, which refers to the parameter that balances the sound in the left and right spaces of the car.

Fade：前后平衡，是指声音在车前部（Front）和车后部（Rear）空间强弱平衡的参数。

Fade: Front/rear balance, which refers to the parameter that balances the sound in the front and rear spaces of the car.

这两个参数可以被独立调节，通过调节这两个参数的组合来达到调节整车内声音的强弱平衡。

These two parameters can be adjusted independently. By adjusting the combination of these two parameters, the balance of the sound inside the vehicle can be adjusted.

Balance和Fade可以调节范围为正负12 step。~~具体step个数请参考PISXXXX。~~每个step和音量dB的对应关系请参考系统设计文档. Balance和Fade出厂默认step都是 step 0。

Balance and Fade can be adjusted. ~~Please refer to PISXXXX~~ for the range and number of steps. And for the correspondence between each step and volume dB, please refer to system design documents. The factory default settings for Balance and Fade are step 0.

### 声场模式/Sound Field Mode

当系统配备品牌音响时，本系统允许用户选择品牌音响调音的声场，如全车均衡，Centerpoint 环绕，主驾均衡~~驾驶员~~，~~前排~~，后座尊享等。

When equipped with brand audio, the system allows the user to select the sound field for the brand audio tuning, such as the whole car, Centerpoint, driver, front row and rear seat.

系统需要根据配置文件~~标定~~判断当前车辆支持哪些声场模式的选择，并将当前车辆不支持的声场模式选项隐藏。若当前车辆仅支持一种声场模式，或不支持声场模式，系统需要将声场模式设置项全部隐藏。

特别地，针对458配备隔断后排娱乐系统的车型，Centerpoint环绕模式名称显示为商务舱Centerpoint环绕。系统可以通过标定P\_RSE\_CONFIGURATION判断当前车辆是否配置后排娱乐系统。

The system should determine which sound field modes are supported by the current vehicle based on the calibration and hide the sound field mode options that are not supported by the current vehicle. If the vehicle supports only one or does not support the sound field mode, the system needs to hide all the sound field mode settings.

## 时间和日期/Time and Date

时间设置功能提供给用户选择12 小时制和24 小时制功能，手动调整小时数和分钟数功能，以及同步GPS时间功能。时间设置的出厂初始值：同步GPS 时间，使用24小时制显示。

For time setting functions, the users are provided with the choice of 12-hour and 24-hour System function, Manual Adjustment of Hours/Minutes, and Synchronizing GPS Time function. The factory default for time setting is “Synchronizing GPS Time”, displaying in 24-hour system.

### 12小时/24小时制选择 24-hour /12-hour System Option

用户可以选择以12小时制或24小时制方式显示时间。24小时制和12小时制的时间对应关系如下：

The user can choose to display the time in 12-hour or 24-hour format. The correspondence between 24-hour system and 12-hour system is as follows:

|  |  |
| --- | --- |
| 24小时制  24-hour system | 12 小时制  12-hour system |
| 00：00~00：59 | 12：00AM ~ 12：59 AM |
| 01：00~11：59 | 01：00AM ~ 11：59 AM |
| 12：00~12：59 | 12：00PM ~ 12：59 PM |
| 13：00~23：59 | 01：00PM ~ 11：59 PM |

### 手动设置时间/Manual Time Setting

在24小时制模式，本系统可调整的小时和分钟的范围如下：

In 24-hour mode, the range of hours and minutes that the system can adjust is as follows:

|  |  |
| --- | --- |
| 小时/Hours | 分钟/Minutes |
| 00~23 | 00 ~59 |

如果在12小时制模式，本系统可调整的小时和分钟范围如下：

If in 12-hour mode, the range of hours and minutes that the system can adjust is as follows:

|  |  |
| --- | --- |
| 小时/Hours | 分钟/Minutes |
| 01~12 | 00 ~59 |

用户调整时间生效后，要立刻显示调整后的值。系统需要记住这个调整的变化值（即和调节前的差值），不需要每次重启都重设一次时间。手动调整时间，系统记录的是以GPS时间为基础的偏差值。

After the user-adjusted time is in effect, the adjusted value shall be displayed immediately. The system should remember the change value of this adjustment (i.e, the difference value), and does not need to reset the time each time when it is restarted. When manually adjusting the time, the system records the deviation based on GPS time.

### 同步GPS时间/Synchronizing GPS Time

用户可以选择用GPS来同步系统时间，所谓同步GPS时间，是指将车机端系统的时间调整到标准的GPS，不再接受用户主管的调快或调慢时间。GPS时间可以来自总线消息，也可以来自于系统内部的GPS模块。在同步GPS时间功能被启用时，系统要同步GPS 的格林威治（Greenwich mean time）时间，并结合时区来综合计算出系统时间。本系统的时区是由标定来设置的，时区值默认设为第8时区，即北京时间。

The user can use GPS to synchronize the system time. The so-called “Synchronizing GPS Time” refers to adjusting the time of the infotainment system to standard GPS, and no longer accepting the time adjusted faster or slower by the user. GPS time can come from the bus message or from the GPS module inside the system. When the “Synchronizing GPS Time” function is enabled, the system will synchronize the GPS's Greenwich mean time and combines the time zones to calculate the system time. The time zone of the system is set by calibration, and the time zone value is set to the 8th time zone by default, that is, Beijing time.

系统应每隔1秒钟同步一次GPS时间。同步GPS时间后，用户手动调整的时间将被清0.

The system should synchronize the GPS time every 1 second. After synchronizing to GPS time, the time manually adjusted by the user will be cleared.

如果用户没有启用同步GPS时间功能，或者系统无法获得GPS信号时，系统要用自身的计时功能来计时并显示正确的时间。

If the user does not enable the “Synchronizing GPS Time” function, or the system is unable to obtain the GPS signal, the system should use its own timing function to time and display the correct time.

如果系统不带GPS功能时，设置“同步GPS时间功能”要隐藏。系统是否带有GPS功能由标定来表明。系统不带GPS功能时，系统要用自身的计时功能来计时并显示正确的时间。

If the system is not provided with GPS function, the "Synchronizing GPS Time" function setting should be hid. Whether the system has GPS function is indicated by calibration. If not, the system will use its own timing function to time and display the correct time.

在同步GPS时间被启用，且GPS信号不可用的情况下，需要内置RTS时间保证系统时间准确。

In case “Synchronizing GPS Time” is enabled and the GPS signal is not available, the built-in RTS time is required to ensure the accurate system time.

时间精度的要求请参考系统设计文档。

Please refer to system design documents for time accuracy requirements.

### 年月日设置/ Y/M/D Setting

~~系统支持用户设置三种日期格式，分别为年/月/日，月/日/年，日/月/年。详细要求请参考PIS-2010~~

系统可以调整年月日，年份，月份和日期的调整范围如下：

The system can adjust the year/month/day, and the adjustment ranges of year/month/day are as follows:

|  |  |  |
| --- | --- | --- |
| 年份  Year | 月份  Month | 日期  Day |
| ~~2014~2037~~  2019~2050 | 01~12 | 01~28/29/30/31 |

日期的范围由于存在大小月（30天或31天），以及2月份可能是28天或29天，所以日期范围的最大值存在28/29/30/31 共4种可能。系统要根据不同年份或月份正确地显示最大日期。比如，2009年的2月份，最大日期不能出现2009/2/29，因为2009年的2月只有28天，最大日期只能是2009/2/28. 再比如4月份，最大日期不能出现 4/31，因为4月份只有30天，不应该出现4/31，最大日期只能是4/30。

The maximum value of the date range includes 4 possibilities, namely 28/29/30/31, because some months have 30 days, some months have 31 days, and February may have 28 days or 29 days. The system should correctly display the maximum date based on different years or months. For example, in February 2009, the maximum date could not be 2009/2/29, because February in 2009 only has 28 days, and the maximum date could only be 2009/2/28. Another example is that in April, the maximum date cannot be 4/31, because there are only 30 days in April, and the maximum date can only be 4/30.

本系统支持的日期范围是“2014/1/1 00:00am”至“2037/12/31 23:59:59pm”，默认时间为2014年1月1日。详细需求参考系统设计文档。

The date range supported by this system is from “2014/1/1 00:00am” to “2037/12/31 23:59:59pm”, and the default time is January 1, 2014. Refer to system design documents for detailed requirements.

## 系统声音设置/System Sound Setting

### 自动音效调整/Automatic Sound Adjustment

自动音效调整即动态音量补偿。当音量减少时增强低频部分，使得声音听起来更加饱满。系统支持用户打开或关闭自动音效调整功能，系统默认设置为打开。

若当前车辆配置的音响系统是外置功放时，系统不支持自动音效调整设置功能。车辆仅在音响系统是内置功放时才支持自动音效调整设置功能。当系统不支持该设置项时，不显示该设置项。

Automatic sound adjustment means dynamic volume compensation. As the volume decreases, enhance the low frequency portion to make the sound sounds fuller. The system allows the user to turn on/off the automatic sound adjustment function and it defaults to on.

### ~~速度音量补偿/Speed Volume Compensation~~

~~利用车速联动音量调节（自动音量）功能，音响系统可持续监控背景噪声（比如因路面改变、行驶速度改变或甚至是开启车窗而产生的噪声），并自动调节音响音量，从而将噪声的影响降至最低。设定值越大，补偿越大。~~

~~With the speed linkage volume adjustment (automatic volume) function, the audio system can continuously monitor the background noise (such as noise caused by road changes, driving speed changes or even opening windows), and automatically adjust the volume of the sound to minimize the influence of the noise. The larger the setting value, the larger the compensation.~~

~~车速联动音量调节通过根据车速的变化来动态调节最适宜的音量，较少音量对驾驶的影响，提升驾驶安全性的功能。~~

~~The speed linkage volumn adjustment dynamically adjusts the optimum volume according to the change of the vehicle speed, thereby reducing the influence of the volume on the driving, and improving the driving safety.~~

~~关于该功能，用户可以有6种选择，分别为：关、低、较低、中、较高、高。6个选择的补偿依次增大，即“较低”比“低”要高，“较高”比“高”要低。默认选项为：高~~

~~The users are provided with six options for this function: OFF, Low, Relatively Low, Medium, Relatively High, and High. The compensation for the six options increases in turn, that is, "Relatively Low" is higher than "Low", and "Relatively High" is lower than "high". The default option is: High~~

### 警示音设置/Warning Tone Setting

警示音设置是指用户设置chime音的大小。系统支持的最大可调节范围是0-63，系统需要通过读取标定MinChimeVolumeStep / MaxChimeVolumeStep来判断当前车辆支持的chime音量调节范围。~~可选择项包括：普通和高。默认项：普通。~~

The warning tone setting refers to the range of the chime tone set by the user. Options include: Normal and High. Default item: Normal.

警示音更改时，系统需要做出音效反馈，即要响一声gong的chime音。即当用户设置chime音量时，系统应发出该设置音量大小的“gong”音。~~也就是设置为“普通”后，系统应发出一声“普通”音量大小的gong音，设置为“高”后，系统应发出 “高”音量大小 的gong音。~~

When the warning tone changes, the system should make a sound effect feedback, that is, a chime sound of gong will be issued. It means after setting to "Normal", the system should emit a gong sound in "Normal" volume. When setting to "High", the system should emit a gong sound in "High" volume.

### 最大启动音量设置/Maximum Startup Volume Setting

最大启动音量，是指用户开机时系统默认声音音量的最大值。用户关机(Acc Off)后，需要保存上次设置的音量值。如果下次启动车辆时，发现上次关闭后的音量值大于该Group允许的最大起始音量（不同Group通过标定来设置），那么系统需要在开机时将音量锁定在该Group的“最大起始音量值”上；如果下次启动车辆时发现上次关闭后的音量值不大于该Group允许的最大起始音量，那么就直接取上次关闭后的音量值为起始音量值。

The maximum starting volume is the maximum value of the system default sound volume when the user turns on the system. After turning off (Acc Off), the volume value set last time should be saved. When the vehicle is started next time, if the volume value after the last power-off is found greater than the maximum starting volume allowed by the Group (different Groups are set by calibration), then the system should lock the volume to the "Maximum Starting Volume" of the Group at power-on. If the volume value after the last power-off is found to be no larger than the maximum starting volume allowed by the Group, the volume value will be directly taken as the starting volume.

默认的最大启动音量为40，可调整的范围是30-50，单位与“音量调整”章节中相同，可调整范围与默认音量可通过标定刷新。标定中最小值不能低于0，最大值不能超过63。

The default maximum starting volume is 40, and the adjustable range is 30-50. The unit is the same as that in the “Volume Adjustment” section. The adjustable range and default volume can be refreshed by calibration. The minimum value in the calibration cannot be lower than 0, and the maximum value cannot exceed 63.

### 音频通道音量调整/Audio Channel Volume Adjustment

系统支持用户在系统设置中分别对媒体音量，通话音量，语音音量，铃声音量，导航音量~~报警音量~~等音频通道进行音量调整，具体参考PIS2022。当用户通过除系统设置以外的其他方式进行调节时，系统设置需要正确显示各个音频通道的当前音量。

The system allows the user to adjust the media volume, call volume, voice volume, ringtone volume, the navigation of the volume ~~alarm volume~~ and other audio channels in the system settings. Please refer to PIS2022 for details. When the user makes adjustments in the way other than the system settings, the system settings should correctly display the current volume of each audio channel.

~~用户也可通过Faceplate和SWC调节音量，~~音量调节的范围：0~ 63，共64个step。音量调整是针对于每个Group而言，不同的Group的音量是被独立调节的。比如电话音量通道和用于播放音频的通道是相互独立的，是分开调节的。且这些 Volume Group的出厂默认音量值是由不同的标定值来设置的。

~~The user can also adjust the volume through Faceplate and SWC.~~ The volume adjustment range is from 0 to 63, with a total of 64 steps. The volume adjustment is for each individual Group, and the volume of different Groups is independently adjusted. For example, the telephone volume channel and the channel for playing audio are independent of each other and are separately adjusted. And the factory default volume values of these Volume Groups are set by different calibration values.

对于不同的 Volume Group，用户关机(Acc Off)后，需要保存音量值。如果下次启动车辆时，发现上次关闭后的音量值大于该Group允许的最大起始音量（不同Group通过标定来设置），那么系统需要在开机时将音量锁定在该Group的“最大启动音量值”上；如果下次启动车辆时发现上次关闭后的音量值不大于该Group允许的最大起始音量，那么就直接取上次关闭后的音量值为起始音量值。

For different Volume Groups, after turning off the system (Acc Off), the volume value should be saved. When the vehicle is started next time, if the volume value after the last power-off is found greater than the maximum starting volume allowed by the Group (different Groups are set by calibration), then the system should lock the volume to the "Maximum Starting Volume" of the Group at power-on. If the volume value after the last power-off is found to be no larger than the maximum starting volume allowed by the Group, the volume value will be directly taken as the starting volume.

## 语言设置/Language Setting

本系统要支持多语言系统，需要支持的语言（包括但不限于）：中文，英文。出厂默认语言设置根据标定（DEFAULT\_SYSTEM\_LANGUAGE）决定。

This system should support multi-language systems and support the following languages (including but not limited to): Chinese and English. The factory default language setting is determined by calibration.

在中文环境下，语言设置这一项显示为英文“Language”，英文环境下，语言设置这一项显示为汉字“语言设置”。

In the Chinese environment, the language setting item is displayed as “Language” in English. In the English environment, the language setting item is displayed as the Chinese character “语言设置”.

语言设置的更改需在500ms内完成，不允许应调整而造成的黑屏闪屏。

Changes to the language settings must be completed within 500ms, and black screen and flash screen due to adjustments are not allowed.

## 语音识别设置/Voice Recognition Setting

### 语音识别设置内容（全平台含Cadi车型）

语音识别设置需要在VCS全平台支持，包括Cadi车型。

Voice recognition Settings require full platform support in VCS, including Cadi models.

本系统支持用户对语音识别功能进行相关设置。~~语音识别设置只用于设定本地TTS的语音提示和语音风格，不用于设置云端的TTS。~~

This system allows the user to set the voice recognition functions. ~~The voice recognition setting is only used to set the voice prompt and voice style of the local TTS, but not the cloud TTS.~~

语音识别相关设置具体参考PIS-2030的4.2章节。

For the voice recognition related settings, refer to PIS-2030.

### 机舱模式触发语音识别设置联动~~（TBD）~~

针对Buick车型，系统需要支持机舱模式设置。即针对语音识别设置项提供的针对机舱模式的语音助手形象和语音包选项，当机舱模式被触发时，界面显示对应语音助手形象和语音包，当机舱模式未被触发时，则对应语音助手形象和语音包需隐藏。具体功能逻辑参考PIS-2100 3.4.1.2.2章节，对应的语音助手形象和语音包以PIS2030定义为准。

~~用户可以选择语音识别功能中的语音提示为详细提示或简单提示。系统默认选项为详细。系统需记录用户当前选项并在下一次车机启动时保存上一次的设置。~~

~~The user can select the voice prompt in the voice recognition function as a detailed prompt or a simple prompt. The system default option is “Detailed”. The system should record the user's current options and save the last settings until the next time when the infotainment system is started.~~

~~用户可以开启或关闭语音唤醒。当语音唤醒开启时，系统允许用户通过输入法设置唤醒词。~~

~~Users can turn on/off Voice Wake-up. When the Voice Wake-up is turned on, the system allows the user to set the wake-up words and the exit words through the input method. When the user says the wake-up words, the voice recognition is enabled; when the user says the exit words, the voice recognition is disabled. The system default wake-up words are read by calibration.~~

~~用户可以调整系统语音交互的播报速度，分为较慢、标准、较快三档，默认值为标准。~~

~~The user can adjust the broadcast speed of the system voice interaction, which is divided into three categories: Slow, Standard, and Fast. The default value is Standard.~~

~~用户可以开启或关闭语音识别启动时的欢迎用语，即提示语。~~

~~The user can turn on/off the welcome words when the voice recognition starts, that is, the prompt.~~

~~系统支持用户对语音播报人进行选择。~~

~~The system allows the user to select voice broadcasters.~~

~~系统支持用户设置开机欢迎语，可支持手动输入和语音输入。~~

~~用户可开启或关闭语音技能推送提醒，默认设置为关闭。~~

~~系统应支持开启或关闭限时免唤醒功能，默认为开启。~~

~~The system should support enabling or disabling the Time-limited Wake-up Free function. It is defaulted to ON.~~

~~系统应支持开启或关闭常用说法免唤醒，默认为开启。~~

~~The system should support enabling or disabling the Common Words Wake-up Free function. It is defaulted to ON.~~

~~系统应支持设置声源定位模式。~~

~~The system should support setting the sound source positioning mode.~~

~~系统支持提示音/提示语选择，支持用户自定义提示语。~~

~~The system supports the selection of prompt tone/prompt, and supports the user-defined prompt tone.~~

## ~~输入法设置~~

~~用户可以对输入法进行设置，具体参考PIS-2018~~

## 蓝牙设置/Bluetooth Setting

该功能的具体定义请参考PIS-2035。

Please refer to PIS-2035 for the definition of this function.

## 显示设置/Display Setting

### ~~视频显示调整/Video Display Adjustment~~

~~在播放视频时，视频播放器支持一共四种显示模式，分别是正常、全屏、缩放、宽屏。~~

~~When playing video, the video player supports a total of four display modes, namely Normal, Full, Zoom, and Wide.~~

~~正常（Normal）: 将video画面同比例拉伸，再显示到屏幕上，允许有黑边存在。~~

~~Normal: Stretch the video image in the same proportion and display on the screen, allowing the existence of black borders.~~

~~全屏（Full）: 将video画面同比例拉伸，再显示到屏幕上，充满全屏，不允许有黑边存在。~~

~~Full: Stretch the video image in the same proportion and display on the screen fully, allowing no black borders.~~

~~缩放（Zoom）: 将video画面不同比例拉伸，再显示到屏幕上，充满全屏即可，不允许有黑边存在。~~

~~Zoom: Stretch the video image in different proportion and then display on the screen fully, allowing no black borders.~~

~~宽屏（Wide）: 将video画面按16：9比例拉伸，再显示到屏幕上，充满全屏。~~

~~Wide: Stretch the video image in a 16:9 proportion and display on the screen fully.~~

~~画质调整需要在100ms内完成，不允许应调整而造成的黑屏。~~

~~The image quality adjustment needs to be completed within 100ms, and the black screen caused by the adjustment is not allowed.~~

### ~~Camera 设置/Camera Setting~~

~~该设置仅针对配备360功能的车辆，具体参考PIS-2019\_360 Surround Viewing System 第3.6章节。~~

~~This setting is only for vehicles provided with 360 functions, refer to section 3.6 of PIS-2019\_360 Surround Viewing System for details.~~

### 仪表与HUD设置/Instrument and HUD Setting

用户能够通过系统选择HUD的显示模式等显示相关设置，具体参考PIS-2068。

The user can select the display mode of HUD through the system. Refer to PIS-2068 for details.

用户能够通过系统调节HUD的高度，亮度和角度。用户能够通过系统开关HUD。具体参考PIS-2068。

The user can adjust the height, brightness and Angle of HUD through the system. The user can switch HUD through the system. Refer to pis-2068 for details.

用户能够通过系统设置仪表自定义区的显示内容，具体设置内容以交互设计为准，具体功能定义参考PIS2076。

The user can set the content displayed in the self-defined area of the instrument through the system, and the specific settings are subject to the interaction design. Refer to pis-2076 for details.

用户能够通过系统设置仪表模式，针对燃油车仪表应支持标准、地图、驾驶辅助和极简四种模式的切换，默认为标准。针对电动车，仪表应支持BEV视图、标准、地图、驾驶辅助、极简五种模式的切换，默认为BEV视图。具体参考PIS-2076。

用户能够通过系统设置仪表侧的超速警示显示开关，具体设置内容参考PIS2076的7.4.2章节。

Users can set the over speed warning display switch on the instrument side. For specific setting, please refer to section 7.4.2 of PIS2076.

用户能够通过系统重置仪表侧限速，仪表侧限速被重置后会dismiss掉当前限速信息直到检测到下一个限速信息才会显示。重置操作的接口由IVI通过总线发送至ADAS模块，由ADAS模块处理。针对CLEA架构，系统使用如下信号，当用户选择reset时，VCU需要持续1s发送$1=True。针对Global B架构，具体信号及逻辑参见IPC CTRS的3.1.278.5.10章节。

该重置功能仅针对Vehicle setting中交通标志识别选项中的交通标志设置。

|  |  |  |  |
| --- | --- | --- | --- |
| Signal | Data Type | Range | Conversion |
| Traffic Sign Memory Customer Reset Request | BLN | N/A | $0=False $1=True |

The user can reset the gauge side speed limit through the system. The reset side speed limit will dismiss the current speed limit information until the next speed limit information is detected. The interface for the reset operation is sent by IVI via the bus to the ADAS module, which handles it. The signal is as follows. When the user selects Reset, VCU needs to continue sending $1=True for 1 second.

### 中控显示设置/Centre Console Display Setting

系统支持用户设置空调状态是否常显在状态栏上，具体设置内容以交互设计为准。

The system allows the user to set whether the air conditioning status is always displayed on the status bar. The specific settings are subject to the interaction design.

~~用户能够通过系统对状态栏中的部分图标是否显示进行设置，具体设置内容以交互设计为准。~~

~~Users can set whether some of the icons in the status bar are displayed through the system, and the specific settings are subject to the interaction design.~~

用户可以选择账户显示昵称或头像，具体设置内容以交互设计为准。

Users can choose to display their nicknames or avatars, and the specific Settings are subject to the interaction design.

系统支持用户开启和关闭smart control功能在娱乐系统中的显示，具体参考PIS2099 Smart Control 3.2章节。

针对458项目，系统支持用户选择系统显示车模的颜色。用户可选颜色为：ALCHEMY，OPULENT BLUE，Abalone，Sharkskin, Zephyr, Dark Shadow, Territory, Geiger，Hold（TBD）共9种。具体颜色以及颜色名称以设计部输入为准。该设置适用于所有使用3D车模显示的界面，具体哪些界面使用3D车模，以设计部输入为准。

~~用户可以设置应用是否开启通知中心提示，具体可设置哪些应用以交互设计为准。~~

~~Users can set whether the application will enable the notification center prompts, and which applications can be set are subject to the interaction design.~~

~~系统支持用户设置通知中心提示的排列顺序，具体参考PIS2012.~~

~~The system allows the user to set the order of the notification center prompts, refer to PIS2012 for details.~~

用户可以设置所有应用的动态图标提醒形式，具体设置内容以交互设计为准。

The user can set the dynamic icon reminder form for all applications, and the specific settings are subject to the interaction design.

~~系统支持用户设置将哪些功能显示在快捷控制的界面中，系统需要将支持放置在快捷控制界面中的功能全部列出，供用户选择。具体设置内容以交互设计为准。~~

~~The system also allows the user to set some functions and allow them to be displayed in the shortcut control interface. It will list all the functions supported in the shortcut control interface for the user to select. The specific settings are subject to the interaction design.~~

## ~~电话呼叫设置~~

~~系统支持2种打电话的媒介，分别是BT Phone和T-Box。系统默认优先使用BT Phone拨打电话。用户可以在系统设置中对此进行修改，从“优先使用BT Phone”改为“优先使用T-BOX”。 因此，在系统设置中，需要有一项内容是“优先使用T-BOX拨打电话”的勾选项，该勾选项默认是不打勾的。当该选项打钩后，表示优先使用T-BOX的资源拨打电话。~~

~~在BT Phone没有连接的情况下，无论该选项如何勾选，都只能使用T-BOX拨打电话。~~

~~在BT Phone连接的情况下，若“优先使用T-BOX拨打电话”没有被勾选，则使用BT Phone拨打电话。此为默认设置。~~

~~在BT Phone连接的情况下，若“优先使用T-BOX拨打电话”被勾选，则使用T-BOX拨打电话。~~

## 声音反馈设置/Sound Feedback Setting

系统支持用户开关不同的系统声音反馈~~，和对系统按键音进行选择~~。声音反馈相关设置项详细内容参考PIS2086。

The system supports the user to switch different sound feedback. Refer to PIS2086 for details of Settings related to sound feedback.

~~系统支持用户开启或关闭触控震动反馈，和选择触控震动反馈的力度。~~

~~系统支持用户开启或关闭3D Touch，并选择3D Touch的力度。~~

## 恢复出厂设置/Restore to Factory Settings

~~“恢复出厂设置”能够将除了“时间设置”、“车辆个性化设置”和“系统设置”统一还原为出厂默认值，并清除用户所有数据，系统在进行该操作时需要用户再次确认。恢复出厂设置的操作需要在5s内完成。~~

~~“Restore to Factory Settings” can restore all settings to the factory defaults except for “Time Setting”, “Vehicle Personalization” and “System Setting” and clear all the user data. The system will ask the user to confirm again when performing this operation. The factory reset operation should be completed within 5s.~~

系统分别支持两种“恢复出厂设置”操作，一种为仅恢复车辆设置，具体恢复内容以及恢复方式详见PIS2051。

另一种为恢复娱乐系统为出厂设置，即将车辆设置恢复为默认值并清除所有用户数据。该功能可通过先进行恢复车辆设置，再使用Android Factory Reset接口实现。该操作会导致娱乐系统重启，因此仅在整车挂P挡时才可以进行此操作，并且当用户选择该功能时，系统需要二次确认，并提示用户系统将重启。若当前车辆挡位不是“P挡”时，系统需要提示用户当前无法进行恢复出厂设置操作。

~~另一种为恢复系统设置以及用户数据，即能够将系统设置中的所有设置项统一还原为出厂默认值，并清除所有用户数据。~~

~~系统需要恢复为默认设置的设置项包含所有系统设置项，以及INC设置，IME设置等除车辆个性化设置外的所有设置项。恢复出厂设置功能不影响存储在云端的与账户关联的数据，建议在清除用户数据之前将账户自动登出，具体实现方案以工程为准。系统需要清除的用户数据包括但不仅限于：壁纸主题数据，导航地图数据，导航账户信息，Media Last Source，Reminder中所有提醒项，用户收藏电台数据，用户账户数据，DBA用户数据，Vehicle Info 仪表是否显示的设置信息，Wi-Fi数据，BT数据，电话簿缓存数据，设备连接数据， Global Search历史记录等用户数据信息。恢复出厂设置需要在5s内完成。~~

~~The system supports two operations of "restore factory Settings" respectively, one of which is only restore vehicle Settings. For details, please refer to PIS2051 for details.~~

~~"Restore Factory Settings" can restore all except system Settings to factory default values and clear all user data. Clear data including but not limited to: wallpaper subject data and navigation map data and navigation account information, Media Last Source, on all reminded, in the user data collection station, user account data, the DBA user data, INC, Vehicle Info whether the instrument display Settings, the IME Settings, VR Settings, Global Search history, in addition to the Vehicle personalized Settings of all Settings related data information, etc. The restoration of factory Settings needs to be completed within 5S.~~

## 开源许可证/Open-source License

在setting中，需要有一个界面，显示所有本VCU模块中所有用到的开源软件协议~~（不区分Linux和Android，同一个软件的不同版本需要写两次 ）~~。开源软件协议的显示内容由软件开发方提供。当系统无法正常获取显示内容，或显示内容损坏时需要弹窗提示用户。

In the setting, you need an interface to display all the open source software protocols used in this module. The open source software protocol display content is provided by the software developer. When the system cannot normally obtain the display content or the display content is damaged, the user should be prompted with a pop-up window.

## ~~车牌号设置~~

~~系统需要提供给用户输入车辆车牌号的能力，以便用户登录车牌号后，其他功能（如违章功能查询）能够使用车牌号信息进行服务。~~

## ~~Apple Carplay~~

~~具体参考PIS-2004~~

~~Refer to PIS-2004 for details.~~

## 软件更新/Software Update

系统允许用户检查一些模块的软件更新或执行更新等操作~~，具体请参考PIS1512和PIS1320 3.2.5章节。~~

The system allows the user to check for software updates or perform updates on some modules.

## ~~壁纸设置/Wallpaper Setting~~

~~系统能够设置系统的壁纸，壁纸由系统预置，可以通过刷新系统更换、新增或删除，不能由用户通过U盘或者网络等方式外部导入，也不能被用户删除。~~

~~当用户选择一张壁纸后，不仅在系统主界面的桌面生效，同时会还会应用在各个程序中，如边框背景都会发生相应改变，具体作用范围根据设计稿决定。~~

~~具体参考PIS-2016。~~

~~Refer to PIS-2016 for details.~~

## 多功能按键/Multi-Function Button（仅458项目）

系统在支持用户设置多功能按键功能。系统需要根据车型标定判断当前车辆是否支持多功能按键，若不支持，需隐藏该设置项。

The system allows the users to set multi-function button functions. The system needs to judge whether the current vehicle supports the multi-function button according to the calibration. If not, the setting item needs to be hidden.

短按多功能按键支持以下功能设置：

Short press the multi-function button to support the following function settings:

组队出行对讲机开始说话/结束说话

Team Walkie-talkie Starts Talking / Ends Talking

播报最后一条导航指令

Broadcast the Last Navigation Command

~~行车记录仪一键拍照~~

~~Event Data Recorder One-button Shot~~

短按多功能按键的默认设置为：播报最后一条导航指令。

The default setting is :broadcast the last navigation command.

~~一键暖冬打开/关闭（方向盘加热/座椅加热/空调）~~

~~One-button Warm Winter ON/OFF (steering wheel heating / seat heating / air conditioning)~~

~~一键清凉打开/关闭（座椅通风/空调）~~

~~One-button Cooling ON/OFF (seat ventilation/air conditioning)~~

~~仪表视图的切换~~

~~Instrument View Switching~~

长按多功能按键~~支持以下功能选择~~仪表唤醒多功能按键设置界面。具体参考交互设计。

Long press the multi-function button to Enter Multi-function Button Setting Interface.

~~行车记录仪视频锁存~~

~~Event Data Recorder Video Latch~~

~~自动泊车开启/取消~~

~~Automatic Parking ON/OFF~~

## V2X设置/V2X Setting

### 仅458项目/only 458 item

系统支持开启或关闭V2X功能项，支持功能项如下，具体参考PIS2054.

The system supports enabling or disabling V2X function items. The supported function items are as follows and please refer to PIS2054 for details.

V2X设置项使用以太网通讯，系统需要支持的设置有：V2X总开关设置项 (V2X Master Switch)，碰撞预警类(Crash avoidance Alert)，交通事件提醒(Traffic event information)，道路交通标识提示(Roadside information)和信号灯信息辅助预警(Traffic light enabled features)。其中后四项为总开关的子设置项。设置项默认值为关闭。系统需要根据标定（P\_V2X\_SETTING\_PRESENT）判断当前系统是否支持V2X设置。当V2X模块功能异常时，当前设置项需显示用户设置内容，但无法变更设置内容，待模块恢复正常时，系统恢复用户设置能力。

There is Ethernet communication for V2X Settings, and the system supports Settings such as V2X Master Switch, Crash Alert, Traffic event information, Roadside information, and Traffic light enabled features. The last four items are the sub-setting items of the master switch.

~~交叉路口碰撞预警Cross-road Collision Warning~~

~~紧急制动预警 Emergency Brake Warning~~

~~异常车辆提醒 Abnormal Vehicle Warning~~

~~车辆失控预警 Control Lost Warning~~

~~道路危险状况提示 Hazardous Location Warning~~

~~限速预警 Speed Limit Warning~~

~~闯红灯预警 Signal Violation Warning~~

~~绿波车速引导Green Wave Optimal Speed Advisory~~

~~紧急车辆提醒 Emergency Vehicle Warning~~

~~道路施工区域提醒 Construction Zone Warning~~

### 仅GB BUICK项目

系统支持开启或关闭V2X功能项，V2X设置项使用以太网通讯，通讯接口具体参考SFS-118  Software Functional Specification for V2X Customization Property. 系统需要根据标定（P\_V2X\_SETTING\_PRESENT）判断当前系统是否支持V2X设置。

系统需要支持的设置有：V2X总开关设置项 (V2X)，车辆碰撞预警(Connected Vehicle Braking Alert)，交通事件及道路交通标识提示(Traffic and Roadside Information)和路口信号灯信息辅助预警(Intersection Stop Alert)。其中后三项为总开关的子设置项。设置项默认值为关闭。系统需要根据通讯接口标定（Visible）判断当前V2X各个设置项是否显示设置。当V2X模块功能异常时，当前设置项需显示用户设置内容，但无法变更设置内容，待模块恢复正常时，系统恢复用户设置能力。

## Dimming调节（仅针对458项目）/Dimming(Only for 458)

部分车型支持通过娱乐系统控制整车背光亮度，用户可以通过系统分别调节整车按键背光亮度和显示屏/娱乐屏背光亮度。系统需要根据标定（P\_DIMMING\_SETTING\_PRESENT）判断当前车辆是否配置该功能，无此功能的车辆需要隐藏此设置项。

Some models can control the backlight brightness of the vehicle through the entertainment system. Users can adjust the backlight brightness of the vehicle buttons and the backlight brightness of the display screen/entertainment screen respectively through the system. The system needs to determine whether the current vehicle is configured with this function according to the calibration, and the vehicle without this function needs to hide this setting item.

系统支持用户通过“加”或“减”调节亮度，~~调节精度为1%，~~最终的亮度值由BCM做处理后反馈给娱乐系统显示，显示精度为1%。支持用户通过长按“加”或“减”调节亮度，VCU需要持续发送对应信号值，BCM会根据信号持续时间来判断亮度调节的步进范围。

The system supports users to adjust the brightness by "adding" or "subtracting". The final brightness value is processed by BCM and then fed back to the entertainment system for display. Users are supported to adjust the brightness by pressing "plus" or "minus" for a long time. VCU needs to continuously send the corresponding signal value, and BCM will judge the step range of brightness adjustment according to the signal duration.

亮度~~最大~~调节范围在3%-97%，~~不同车辆不同场景能够支持的亮度调节范围不同，因此系统无法显示一个固定的亮度调节范围，只要能够显示当前亮度状态即可~~。~~由于白天对应的亮度调节范围会小于夜晚，系统需要提示用户“白天亮度可调节范围较小”。~~白天亮度为最大亮度，不支持调节，系统需要提示用户。

The maximum brightness adjustment range is between 3% and 97%. Different vehicles in different scenes can support different brightness adjustment ranges, so the system cannot display a fixed brightness adjustment range, as long as it can display the current brightness state. Since the brightness adjustment range during the day will be smaller than that at night, the system needs to remind the user that "the brightness adjustment range during the day is small".

系统通过总线信号获取当前亮度状态以及控制调节亮度，使用的总线接口详见下方表格：

The system obtains the current brightness state through the bus signal and controls and adjusts the brightness. The bus interface used is shown in the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Signal** | **Range** | **Conversion** | **Comments** |
| Interior Dimming Display Change Request | N/A | $0=No Action;  $1=Increase;  $2=Decrease | 当用户调节显示屏/娱乐屏背光亮度时，VCU通过该信号通知对方模块。  When the user adjusts the backlight brightness of the display/entertainment screen, VCU notifies the other module through this signal. |
| Interior Dimming Change Request | N/A | $0=No Action;  $1=Increase;  $2=Decrease | 当用户调节整车按键背光亮度时，VCU通过该信号通知对方模块。  When the user adjusts the backlight brightness of the vehicle button, VCU notifies the other module through this signal. |
| Interior Dimming Display Change Provided Allowed | N/A | $0=False  $1=True | 表示当前环境下娱乐屏/显示屏亮度是否可以提供给用户调节  Indicates whether the brightness of the entertainment screen/display can be adjusted for the user in the current environment. |
| Interior Dimming Change Provided Allowed | N/A | $0=False;  $1=True | 表示当前环境下整车按键背光亮度是否可以提供给用户调节  Indicates whether the backlight brightness of the vehicle keys under the current environment can be provided to the user for adjustment. |
| Display Night Scheme Active | N/A | $0=False;  $1=True | 表示当前的外部环境是白天还是晚上  Indicates whether the current external environment is day or night. |
| Interior Dimming Level | 0 – 255% | E = N \* 1% | 用于~~控制~~显示实体按键的背光亮度  Used to control the backlight brightness of physical keys. |
| Interior Dimming Display Level | 0 – 255% | E = N \* 1% | 用于~~控制~~显示屏幕的亮度和按键指示灯的亮度  Used to control the brightness of the screen and the brightness of the button indicator. |

# 系统需求/System Requirements

## 互联与账号相关/Interconnection and Account-related

系统设置内容需要跟随系统账号，当有账号登陆车机时，系统需记录该用户的设置项更改，当该用户（账号）再次登陆时，车机自动将该账号的设置项状态同步至当前车辆。当无账号登陆系统时，系统需显示上一次无账号登陆时的设置项状态。具体哪些系统设置内容跟随账号，以PIS2064中的定义为准。

The system settings should follow the system account. When an account is logged in, the infotainment system will record the user's setting item change. When the user (account) logs in again, the infotainment system automatically synchronizes the setting status of the account to the current vehicle. When no account is logged into the system, the system should display the status of the setting item when there is no account login last time. The system settings that should follow the account are subject to the definitions in PIS2064.

## 支持Global Search

系统设置中的设置项内容需要支持Global Search功能，具体功能定义详见PIS2059第4.2.4章节。

The Settings items in system Settings need to support the Global Search function. For specific function definitions, please refer to Section 4.2.4 of PIS2059.

## 版本升级/Version Upgrade

版本随系统升级。

The version is upgraded with the system.

## 埋点需求/Event Tracking Requirement

## 相关CAN信号/Related CAN Signals

~~V2X功能涉及到的总线信号参考ICEI文档以及系统设计文档。~~

~~For the bus signals involved in V2X function, refer to ICEI documents and system design documents.~~

## 相关标定项/Related Calibration Items



# 附录/Appendix

**Revision Log**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Version** | **Date** | **Section** | **Description** | **Author** |
| 0.0.0.7 | 2021/1/8 | 3.1.3，3.2.2，3.3.3，3.5.2，3.11 | 1.增加smart control开关。  2.Chime音量设置变更为step调节。  3.更新恢复出厂设置功能。  4.更新声场模式名称。  5.增加机舱模式对应的VR设置要求。  6.更新自动音效调整设置显示条件。  7.增加GB Buick V2X设置功能需求。  8.增加仪表模式设置。  9.增加458车模颜色选择。 | Wang Ziqi |
| 0.0.0.6 | 2020/10/30 | 3.1，3.5, 3.8.3, 3.12, 3.14, 3.17 | 1.针对Cadi车型，VR setting为中国区独有需求。更新VR setting设置项。删除主动交互开关。  2.增加机舱模式相关设置项。  3.优化开源许可证需求。  4.删除Carplay设置项。  5.补充多功能按键默认设置，删除行车记录仪一键拍照。  6.补充Audio相关设置描述。  7.补充对恢复出厂设置的描述。  8.增加仪表超速设置。 | Wang Ziqi |
| 0.0.0.5 | 2020/9/11 | 3.3.4，3.8.3，3.8.4，3.77，3.18，3.19，4.2 | 1. INC设置项从setting app中remove 2. V2X设置项变更为分类设置 3. 补充最大启动音量设置 4. Dimming调节补充说明 5. 明确恢复车厂设置功能方案 6. 根据VR spec更新VR setting 7. 删除快捷菜单相关设置项 8. 删除主题壁纸设置 9. 系统设置项需要支持Global Search | Wang Ziqi |
| 0.0.0.4 | 2020/6/2 | 3.1.1，3.2.4，3.3.2，3.3.5，3.8.3，3.10，3.17，3.19 | 1. Remove速度音量补偿  Remove speed and volume compensation.  2.增加HUD相关设置功能  Increase HUD settings.  3.删除EQ预设  Remove EQ preset.  4.删除多功能按键设置  Delete the multi-function button Settings.  5.声音调节增加导航音量调节  Sound adjustment increase navigation volume adjustment.  6.增加dimming调节  Increase dimming adjustment.  7.增加中控屏声音反馈选择  Add the selection feedback sound of the center control screen.  8.删除最大启动音量设置  Remove the maximum startup volume setting. | Wang Ziqi |
| 0.0.0.3 | 2019/12/27 | 3.8 | 1. Remove Video Display Adjustment  2. Remove 360 Camera Setting | Wang Ziqi |
| 0.0.0.2 | 2019/9/5 | All | 1. Revise the document function description. 2. Add some functions such as voice recognition setting, status bar setting, notification center setting, multi-function button setting and V2X setting. | Wang Ziqi |
| 0.0.0.1 | 2018/7/31 | ALL | Created | Wang Ziqi |