Release note for Paladin PL18 EDU transmitter firmware/Paladin PL18 EDU 软件版本更新记录

Software version 软件版本	1.0.65	Date 日期	01/2022

新增功能：

1. 新增适配无线教练模块（FS-WTM01）的功能：
   - 搭配无线教练模块使用，可实现无线教练功能。
2. 新增适配 i-BUS2 设备功能：
   - 可连接 i-BUS2 GPS（FS-iBG01）传感器。在发射机端查看相关的回传信息（如模型当前方位、移动方向和姿态等信息）并可对其进行校准等初始设置。
3. 开关设置：
   - 增加了可设置摇杆、旋钮来控制功能的启用禁用，且所有支持分配开关的功能均支持设置常开常闭。
4. 新增自动搜索接收机功能：
   - 可以设置开机开启高频后自动切换到当前已开机的接收机对应模型。
   - 也可以在模型选择功能中触发搜索接收机按钮来快速切换到已开机的接收机对应模型。
5. 传感器：
   - i-BUS 设置中增加设置电压传感器校准功能，可设置一个补偿值，补偿压差让界面显示值与实际值更接近。
   - 新增极值监测功能，还可设置开关清除极值。
   - 新增转速传感器速度监测功能和对应的里程显示功能，可设置周长把转速转换为速度，并根据速度和时间计算出 2 个里程，且可分配实现里程归零。
6. 微调：
   - 新增备份微调功能：微调设置中可以设置备份微调实现微调数值的存储，数字微调可通过调用备份微调方式恢复备份，旋钮则可手动设置为备份值。
7. 编程混控：
   - 新增可以定义混控开启 / 关闭的延迟。
   - 主控选择为功能时可以定义微调是否影响被控功能。
   - 当主动被设置为功能时，可设置关联（可设置正关联、负关联，不关联）。选择关联（正或负）时，其它功能混控影响此功能的变量也会影响此组混控的被动；被动均可设置关联，设置关联（正或负）后，以此混控被动为主动的编程混控的主动设置为关联（正或负）时，可被影响。
8. 多油门：
   - 固定翼飞机模式增加多油门设定，最多支持 4 个引擎，并可以设置每个引擎的熄火位置、熄火阈值和熄火控件。
9. 教练模式：
   - 学员飞机教练：新增未直接连接飞机的发射机可以设置教练功能控制权切换能力（仅确认同款搭配有此功能，其它需要支持关闭与无线教练通信 / 切断与教练遥控有线通信的机型才可以使用）。
   - 新增教练可以与学员同时控制飞机的功能：教练功能中设置输入对象控制模式为混合时教练和学员可同时控制模型，二者控制效果叠加。
   - 新增教练口可自适应识别非标 PPM 信号和设置输出非标 PPM 信号功能。
10. 模型设置：
    - 新增多种模型类型和可选功能项目。
    - 模型类型相比旧版增加了船和机器人，工程车模型也扩展设置为车，车模

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新增功能：

型增加多种功能可选。

- 固定翼模式下翼型相关功能重新设计，增加了 4 副翼 /4 襟翼的选择、多油门设定等功能、还增加了拉烟、起落架等新功能。
- 车模式、机器人模式增加了履带混控模式，可以很方便的控制履带模型。
- 新增更改模型图片功能，模型图片不再被类型限制，模型设置功能中用户可以自定义模型主界面显示的图片（系统内置多款模型图片可选）。

11. 计时器：
    - 计时器 1、计时器 2 增加语音 + 振动计时提醒选项，提醒更强烈。
12. 对码设置：
    - 对码接收机前可以对高频的一些参数进行设置来应对不同的应用场景。不同的对码设置可以配置不同的接收机，并且不同的配置参数可以让高频的距离、延迟、抗干扰等能力不一样，用户可以根据自己的设备情况和应用场景进行不同的设置来发挥最为适宜的高频性能。
13. 为适配增强版接收机新增 / 改变一些适配增强版接收机特有的功能设置项目。具体有如下几点：
    - 增强版接收机与经典版接收机对码配置参数不同：对码设置 RF 系统为 Classic 18CH 的是经典版接收机专用的对码系统，其它都是增强版接收机可对码的 RF 系统，且对码时候弹窗提示支持接收机类型。
    - 增强版接收机支持双接收模式，并可设置接收机的 PWM 输出起始通道：对码设置中增强版接收机支持的 RF 系统均可以设置起始通道，另外在 Routine 18CH 下双向通信时候可设置为双接收模式。传感器中新增副接收机的回传参数显示和支持设置对应的报警。
    - 增强版接收机支持 Newport 功能，即在设备总量不冲突情况下接口协议可任意设置：接收机接口协议设置菜单做了修改以接口名称作为设置项，允许设置 Newport 接口输出不同的接口协议。
    - 增强版接收机支持对每个通道设置不同的 PWM 频率（PWM 频率），且支持窄频制式的 PWM 信号和支持设置 PWM 信号周期与高频同步：增强版接收机对应的 PWM 频率菜单支持设置每一个通道舵机 PWM 频率，并且支持 SR 和 SFR 模式和可选与高频同步项目。
    - 增强版接收机有自带电压传感器功能：传感器中新增 BVD 电压回传，接收机菜单中增加 BVD 电压校准功能。
    - 增强版接收机支持 i-BUS2 协议，已有 i-BUS2 PWM 转换器：新增 i-BUS2 PWM 转换器设置功能，可以设置接口输出多少通道，并且可以设置接口按通道同步设置 PWM 频率。
14. 新高频库修改后已有接收机的功能也有相应优化，针对优化的接收机的更多功能新增了以下设置项：
    - 失控保护：新增设置 PWM 信号失控保护的无输出模式和单独关闭 PPM, S.BUS 信号输出的失控保护设置项。
    - 信号强度输出：新增设置接收机通过一个通道输出信号强度的功能，且通道是可以设置为任意通道并且支持设置是否启用功能。
    - 支持配置为 i-BUS/i-BUS 2 协议 PWM 转换器（代替了上一版本的从机功能）：新增配置接收机为 PWM 转换器功能，可以配置所有功能支持接收机（上一版本已经有 PWM 信号输出接口且支持 i-BUS 协议）为 i-BUS/i-BUS2 信

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新增功能：

号转换为 PWM 输出的转换器。配置 i-BUS 协议 PWM 转换器可以设置起始通道和接口 PWM 频率（所有通道一个频率 50-400Hz）。配置 i-BUS2 协议 PWM 转换器时无需设置任何参数，它可以在使用时再设置。

15. 新增支持富斯遥控管家功能：
    - 对于更新发射机固件、导入导出模型和接收机固件更新，无需多平台操作，打开遥控管家 V3.0，一站搞定。
16. 新增空气刹车功能：
    - 可设置开关作为开启开关，支持定义两组数值。可以设置襟翼、副翼等偏移，并可以设置升降舵的补偿偏移量，在飞机降落时打开开关来实现快速减速功能。
17. 新增升级向导功能：
    - 用户升级后首次开机需要按照按开机升级向导操作。

修改功能：

1. 菜单分类分级优化：将主菜单按应用分成三个分类菜单，并在主页 1 上展示分类菜单入口；增加自定义菜单入口，满足暂不适应此分类的用户使用以及提供一个用户常用菜单定义的入口；把原系统设置中部分设置项提取出来且自成一个设置菜单，并把自动关机、闲置报警、背光亮度等功能合并为一个单独的显示设置菜单，已达到优化菜单查找和进入的目的。
    - 基础菜单：模型的基本参数设置和辅助工具菜单。
    - 系统菜单：与硬件关联的一些设置，另外是一个模型只设置一次的，以及不同模型共用的参数。
    - 模型菜单：针对精细控制的一些特别设置，模型特有功能。
    - 自定义菜单：用户可以选中三种类型中任意菜单在此菜单列表中显示 / 不显示，以及排列顺序。
    - 进行过级别 / 命名调整的菜单：系统设置改为通用设置，把原本它的子菜单中息屏时间，屏幕背光亮度，闲置报警时间，自动关机项目提出到一个与之平级的显示设置菜单中，主界面快捷操作设置、拨档开关设置、摇杆校准等功能提取到与基本设置平级的各自一个菜单项。控制范围测试也被从接收机设置子菜单中提取出来单独作为一个设置菜单在系统菜单中。
    - 优化主页 1 页面框架和排版及菜单入口。
2. 主页 2 界面优化：
    - 计时器区域缩小，不再显示设置按钮，仅指示时间，点击进入计时器界面去设置。
    - 增加显示传感器数据个数 4 增加到 8，并且对于大的显示框数字字号增大以便识别。
3. LED 状态指示修改：
    - 规范 LED 灯对应状态指示，具体参见对应版本说明书。
4. 调整自动关机：
    - 当发射机电压低于 3.4V 时，语音提示“遥控器电压低，自动关机”后，发

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修改功能：

射机执行自动关机。

5. 菜单排布：
   - 将原有的模型菜单拆分成模型选择、模型设置菜单。
   - 将原比率和曲线功能拆分为功能比率、双比率设置菜单。
   - 原有的收油门功能拆分为油门熄火和降低怠速。
   - 修改系统菜单中控制范围测试为高频选择 FRM301 可见，其它高频类型不可见。
6. 通道显示：
   - 界面增加全部通道显示页，且默认展示，数据仅显示通道数和百分比。
7. 功能分配：
   - 把微调菜单中微调按键设置中“微调模式、微调比率”搬到本功能中，即以功能为设置对象，对应到每个功能可以设置不同的微调模式 / 微调比率。
   - 微调分配界面增加微调设置按钮，点击进入微调设置界面，显示微调比率和微调模式并可点击设置。
   - 去掉功能概览，控件概览和微调概览界面区分已分配未分配控件显示。
   - 通道行程 / 范围的改动不影响微调量，微调比率决定了微调量。
8. 微调：
   - 功能分配中未设为微调的按钮也始终显示数值，且均可点击进入界面设置微调。
   - 把设置微调比率和微调模式的设置项移动到功能分配界面，设置不绑定控件，同一个控件分配给不同功能可以是不同的微调模式和微调比率。
   - 设置微调调节当前模式 / 所有模式方式由图标改为内容区域点击切换，如此更直观展示设置项内容。
9. 传感器：
   - 增加 8 个可设置报警的传感器参数，并始终显示设置的报警值，且根据传感器类型可以设置两个（均低于 / 均高于 / 一高一低）的报警值，并可选择性开启哪一个报警。
10. 模型选择：
    - 把原模型设置功能中“选择模型”“复制模型”功能整合到本功能中，并把模型默认 20 组改为默认一组允许用户新建的方式增加模型数量（最多增加至 18 组）。
    - 可以针对当前正在使用模型进行模型设置，修改模型名称、类型、新建和删除模型等。
11. 模型设置：
    - 把原模型设置中“模型重命名”、“摇杆模式选择”、“模型结构设置”、“恢复模型默认设置”等功能集合在此菜单。
    - 全新的 UI 设计适配功能设置，良好的图形向导指引下完成模型结构相关设置。
    - 可对当前正在使用模型进行模型设置（可修改模型名称、类型、翼型等)。
12. 飞行模式 / 工作模式：
    - 所有模型均支持飞行模式 / 工作模式功能，功能设置一样，仅名称不一样（车

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修改功能：

船机器人显示为工作模式，飞机类显示为飞行模式）。

13. 功能比率和双比率：
    - 原比率和曲线功能删除，由功能比率菜单和双比率设置功能实现和超越原有菜单功能。
    - 修改界面显示，功能设置界面增加实时位置和比率显示。
    - 修改运算规则，设置运算针对的是分配到通道的所有功能，包括辅助功能，原版运算是针对控件。
    - 修改调节逻辑：增加偏移设置项，调节偏移会把整条变量线在 Y 轴上移动。
    - 增加线型选择界面：将油门不回中的设置增加为一种线型，所有功能曲线均可设置不同的线型。
    - 增加 DR 设置替代曲线切换，不再限制一个功能仅可以设置 2 组双比率，所有功能（无主控变量的功能不支持）均可定义为双比率一共可以定义 10 组双比率。
    - 每组双比率可以设置对应功能、开关及启用模式。
14. 编程混控
    - 将原混控功能下的特别的混控定义移到主动对应的功能混控菜单，例如固定翼下的方向到副翼混控移到方向功能下，菜单名称改为编程混控。
    - 原曲线混控、线性混控去掉，统一为 10 组自定义混控，设置方式为类似原曲线混控方式。
    - 混控比率调节方式进行优化，显示选中调节点，增加偏移设置项。
    - 主控被控运算逻辑发生了改变，主控可选控件和定义到通道的所有功能（包括辅助功能），被控可选全部通道。
    - 采用新的界面设计，增加混控延迟、关联和微调启用等新的功能。
15. 舵机速度：
    - 将原延迟设置改为舵机速度，同时更改菜单界面用语，以更好区分不同设置方式。
    - 增加设置启动速度和恢复速度，且可定义为对称 / 线性的启动恢复基准。
16. 油门熄火：
    - 修改原收油门功能下熄火功能可设置多油门熄火，允许设定低于油门最低位置的熄火位。
    - 增加油门阈值设置功能，可自主设置触发油门熄火的位置。
17. 降低怠速：
    - 修改原收油门功能下怠速功能运算方式，可以降低 / 升高怠速。
18. 油门针、螺距曲线：
    - 修改功能运算，支持单独分配控件来控制，不与油门绑定。
19. 固定翼飞机 / 滑翔机修改：
    - 翼型相关设置：以功能主控为向导，整合了混控给其它功能的设置菜单。例如副翼功能 / 襟翼功能等。
    - 部分菜单界面进行了优化设计、把很多功能的开关分配入口提到了功能界面内容区域直接显示分配控件名称和控制状态
    - 飞机 / 滑翔机下均整合了无尾飞机的设置方式。

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修改功能：

20. 直升机：
    - 把油门混控、倾斜盘混控功能从混控中移出后分别作为单独的设置功能。
    - 修改陀螺仪功能分配开关功能，不在功能分配中分配，而是在功能菜单中点击开关分配按钮分配，且仅支持分配开关。
21. 逻辑开关：
    - 增加一组逻辑开关，由原来的 3 组开关变为 4 组，且逻辑开关设置可以选择自己以外的逻辑开关进行再一次逻辑。
22. 教练模式
    - 适配新增功能 UI 界面也做了修改。
23. 接收机设置：
    - 修改菜单排序。
    - 增加 i-BUS2 设备预览设置行，把所有接入 i-BUS2 设备均显示在此菜单中，对应不同的 i-BUS2 设备在接入后可以在接收机设置菜单中设置。
    - 因增加了对码前设置 RF 系统等功能，接收机对码改为对码设置并连接到对码设置界面，对码入口在对码设置界面 .
    - 控制范围测试菜单去掉，系统菜单中增加一个专门的测试菜单图标来进入功能。
    - 接收机协议改为自定义接口协议，页面修改为以接口为基准对应去选协议，并且针对不同的接收机有不同的设置项和可选协议，另外不再显示连接接收机才可以设置，即连接和断开接收机都可以设置。
    - 配置从机菜单去掉，新增的配置接收机为 PWM 转换器功能替代了它。
    - 舵机中点改为舵机中点偏移，并且选项对应改为偏移和不偏移选项。
    - 接收端电压检测改为低电压语音报警，当前不再信息栏显示接收机电压，此功能仅设置语音报警电压，故修改界面用语明确指示功能目的。
    - 低信号报警改为低信号语音报警，相对传感器里面的报警设置，用户无法区分此处设置报警时什么样的效果，故增加语音字样，清晰指示报警为语音。
    - 舵机响应速度改为 PWM 频率。
24. 开机界面优化：
    - 开机界面重新设计，改为彩色 logo，让多彩的颜色给您带来更好的体验。
25. 高频设置菜单优化：
    - 把之前点击高频类型设置中对应选项进入的设置菜单（高频模块版本信息、高频模块固件更新、PPM 设置）提到同级来，解决了在不更改高频设置无法发现此菜单的问题。
    - 把设置高频通信方式为单向通信还是双向通信的设置项移到对码设置中去设置。
26. 扰流板：
    - 扰流板中增加升降舵设置项，可以设置扰流板变化的时候升降舵的补偿值。
27. 优化启用 / 禁用图标：
    - 在表达启用 / 禁用的地方改为即可表达当前状态又起到点击指示作用的状态开关。

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特殊变化：

1. **模型数据存量变为最多支持 18 组模型存储。**
2. **不同模型下对码同一个接收机，单双向一致的情况下可能会不记忆上次对码的模型。新增对码设置功能中，不同的设置会对对码的接收机进行不同的配置，并且这个不同设置让接收机不能再与之前的设置重新通信，除非修改回原配置重新对码成功。**

注意事项：

1. 去掉油门模式功能，校准需要把油门摇杆放置在中位再进行校准，校准运算始终识别中位。
2. 新版本程序混控叠加有可能超出内行程，设置通道行程时一定要确认高低端范围在舵机安全位置内。
3. 关于模型数据继承的说明：旧版本模型数据不支持导入到新版本，更新版本后，请重新对码和设置模型数据。
4. 本版本更新了高频库，升级发射机固件后需要同步升级高频头、接收机固件后才能使用。更新方法如下详细描述：
   - 升级装机的高频头 FRM301：本次固件升级后第一次开机增加了开机向导，用户按指导操作即可升级高频头，但是如高频未连接或者其它情况需要后续用户自主去通过发射机菜单点击升级。在发射机正常开机，高频正常连接且开启状态下，点击高频设置菜单中，选择高频类型为 FRM301 时，菜单列表中有升级高频模块菜单栏，点击即可。
   - 升级接收机：

     1. 发射机固件打包的接收机的固件，可以直接让接收机进入更新状态后，通过发射机的接收机菜单中更新接收机功能，选择对应接收机型号去更新；

     2. 使用电脑端软件《Flysky Assistant》与发射机配合更新，本次版本更新因涉及高频库更新，更新完版本后只能强制更新接收机固件，强制更新必须使接收机进入强制更新状态，后续可在通信状态下正常更新。
5. 对于电脑端软件《Flysky Assistant》与发射机配合功能而言，所有操作均在电脑端，发射机只需要保持与电脑连接正常即可。另外 USB 设备被一种电脑端软件识别后其他的软件就不能识别到此设备，需要关闭不用的设备才能正常使用。虽然本版本软件已经完全兼容遥控管家，但是发射机上依然保留老的更新固件、更新接收机的方法，并且新打包了增强版接收机 FTr8B 的最新固件，如果您愿意仍可以使用老的方式实现对应的功能。
6. 新固件新增多种高频配置可选，但并不是所有接收机都能适配，经典版的 FTr10/FTRr16S 接收机仅支持 Classic 18CH 的高频配置，需要体验其它配置，则需要购买增强版系列接收机，如 FTr8B 等。

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New Features :

1. Adds a new function to adapt to the Wireless Trainer Unit (FS-WTM01).
   - It can be used with a wireless trainer unit to realize the wireless trainer function.
2. Adds a new function to adapt to the i-BUS2 GPS sensor.
   - At the transmitter side, you can view the relevant return information (such as the current orientation, moving direction and attitude of the model) and make initial settings (for example, **Calibration**).
3. Adds a function for Switch settings.
   - Sticks and knobs can be set to enable/disable the functions. All functions assigned a switch can be set to Normal Open (NO)/ Normal Close (NC).
4. Adds an automatic search for receiver function.
   - You can make settings to automatically switch to the model corresponding to the currently powered on receiver after the transmitter is turned on and the RF is enabled.
   - You can also click  (the receiver search button) to quickly switch to the model corresponding to the powered on receiver.
5. **Sensor**
   - The i-BUS setting is added a voltage sensor calibration function. You can set a compensation value to offset the voltage difference so that the display value approaches closer to the actual value.
   - Adds the extreme value monitoring function for sensors. You can set a switch to clear the extreme value.
   - Adds the speed monitoring function and the corresponding mileage display function. The perimeter can be set to convert RPM to speed. You can calculate 2 mileages based on speed and time. The switch can be assigned to achieve mileage to zero.
6. **Trim**
   - Adds the backup trim function. The backup trim can be set to store trim values. For the digital trim, you can restore to backup data by calling the backup trim method. For knob, you can set to backup value manually.
7. Pro. Mixes (programming mixes)
   - You can set delay to enable/disable the mixes.
   - When **Master** is set to a function , it can be defined that whether the **Trim** affects the **Slave** (**On** or **Off**)
   - When **Master** is set to a function, the **Link** can be set(can be set to **NOR**(normal), **REV**(reverse) , or **OFF**). When the **Link** is set to **NOR** or **REV**, other function mixing variables that affect this function will also affect the **Slave** of this group of mixing. All **Slave**s can be set the Link. After the link is set to **NOR** or **REV** for one Mix's Slave, at the time, if the other Program Mix uses this Slave as its Master and the Master's link is set to NOR or REV, then the later will be affected by the former.

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New Features :

8. Multi-throttles
   - Adds the settings of multi-throttles for airplane. Supports up to 4 engines. You can set the **Cut position**, **Cut threshold** and **Cut switch** for each engine separately.
9. **Trainer mode**
   - The transmitter is set to student mode: adds the function that a transmitter not directly connected to the airplane can be set with the trainer function control switching capability (Only the same model is confirmed to have this function, and other models that support shutting down connection with wireless trainer unit/cutting off wired connection with the trainer transmitter can use it).
   - Adds the function that the trainer can control the airplane with the student at the same time: When the **Mixed mode** of input object control is set to **Mixed** in the **Trainer mode**, the trainer and the student can control the model at the same time, and the control effect is of the two superimposed.
   - Adds such functions as adaptive recognition of non-standard PPM signal and set the output of non-standard PPM signal at the Trainer port.
10. **Model setup**
    - Provides various model types and optional function items.
    - Adds **Boat** and **Robot** model types compared to the previous version, the original engineering vehicle model is also extended to car model. Added a optional variety of functions for car model.
    - For the Airplane models, adds 4 ailerons/4 flaps option and multi-throttle setting functions. Some new function are added, such as, **Smoking** and etc.
    - For the **Car** and **Robot** modes, adds the **Track mixing** functiobto better adapt to track models.
    - Adds change of model pictures function. The restriction on the types of model picture is lifted. The user can customize the picture displayed in the main interface through **Model setup** function. a variety of model pictures can be selected.
11. **Timer**
    - In **Timer 1** and **Timer 2**, adds the option of **Sound + Rock** timing reminder, with a better sound effect.
12. **BIND Setting**
    - Before binding a receiver, some RF parameters can be set for different application scenarios. Different bind settings are corresponding to different receivers. By setting different configuration parameters, users can change the RF range, delay and anti-interference abilities, and obtain suitable RF performance by making different settings according to the devices and application scenarios.

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New Features :

13. Adds/modifies function setting options for enhanced receivers.
    - Different bind configuration parameters between enhanced and classic receivers: Classic 18CH is a special bind setting RF system for classic receivers. All other RF systems are for the binding of enhanced receivers. A pop-up window will show the types of the supported receivers.
    - Enhanced receivers support the dual receive mode, and the receiver's start channel of PWM output can be set. In Bind setting, you can set up the start channel of all RF systems supported by enhanced receivers. In duplex communication under Routine 18CH, dual receive mode can be set. As a new feature, the sensor displays the return parameters from the secondary receiver and supports the setting of the corresponding alarms.
    - Enhanced receivers support the Newport function, i.e., you can set the interface protocol arbitrarily when the total number of devices is ok: The receiver’ s interface protocol setting menu is modified, the interface name is used as a setting option, and you can set the Newport to output different protocols.
    - Enhanced receivers support the settings of different PWM frequencies via **PWM frequency** function for each channel, support narrow frequency PWM signals, and also support the synchronization between PWM signal cycles and RF: in the PWM frequency menu of enhanced receivers, you can set the servo PWM frequency for each channel. It also supports SR and SFR modes, and synchronize with RF.
    - Enhanced receivers are designed with a voltage sensor function. New features: BVD voltage return in the sensor, and BVD voltage calibration in **RX setting** menu.
    - Enhanced receivers support i-BUS2 protocols: i-BUS2 PWM converter setting function. You can set the number of output channels for the interface, and set the PWM frequency of the interface synchronize with channel.
14. After the new RF library is modification， The existing functions of the receiver are correspondingly optimized. The following setting options are added:
    - **Failsafe**: You can set a no output mode for PWM signal, set to shut down PPM separately, and set the failsafe item for S.BUS signal.
    - **Signal Strength Output**: You can set the receiver to output signal strength through one channel. The channel can be set to any one, and you can set to enable or disable this function.
    - Supports the configuration as i-BUS/i-BUS2 protocol PWM converter (to replace the slave function in the previous version): you can set the receiver as a PWM converter, and configure all functions to support the receiver the previous version already has a PWM signal output interface and supports the i-BUS protocol to serve as converter to convert i-BUS/i-BUS2 signals to PWM signals outputing. When configuring the i-BUS protocol PWM converter, you can set the start channel and

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New Features :

interface PWM frequency one frequency for all channels: 50-400Hz. It is unnecessary to set any parameters when configuring I-BUS2 protocol PWM converter. You can set them later.

15. Adds FlySky Assistant support function
    - You can use FlySky Assistant V3.0 to update transmitter firmware, import and export model data, and update receiver firmware at once.
16. Add sair brake function
    - You can set the switch as startup switch and define two sets of values. You can set the offset of flaps and ailerons, and set the compensation offset of elevator. Switch it on to realize fast deceleration when the aircraft is landing.
17. Adds upgrade wizard function
    - When the transmitter is turned on after upgraded, you need to follow the upgrade wizard to operate.

Modified functions:

1. Menu category optimization: The main menu is divided into three categories according to applications, and a classified menu option is displayed on home page 1. A custom menu option is added for users who are not used to this classification. There is also an option for the user to define commonly used menus. Some items in the original system settings are extracted to form a separate menu, and some functions such as **Auto shutdown**, **Standby timeout** and **Backlight timeout** are combined in a separate display setting menu so as to optimize menu search and access.
    - **Basic**: Basic parameter settings of the model and auxiliary tools menu.
    - **System**: Include some settings associated with the hardware, one-time settings for a model, and parameters used in different models.
    - **Model**: Some special settings for fine control, and model-specific functions.
    - **Custom menu**: Users can choose to display or not to display any one of the three types of menus in this menu list and arrange their order.
    - Menu adjusted by level/name: **System setting** is changed to **General**, and such options as **Standby timeout**, **Backlight timeout**, **Backlight brightness** and **Auto shutdown** in its submenu are placed in a setting menu which is on the same level. And such functions as main interface **Quick access**, **Switches setup** and **Stick Calib.**(calibration) are extracted and placed in their respective menus on the same level with basic settings. The **Range test** is also extracted from the receiver's settings submenu and placed as a separate settings menu in the system menu.
    - Optimizes the framework, layout and menu options of Homepage 1.

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Modified functions:

2. Homepage 2 interface optimization
   - Reduces the timer area. Setting icon is not displayed any more. Time is indicated but you need to click and enter the timer interface for setting.
   - The number of displayed sensor increased from 4 to 8, and the font size of the numbers in large display boxes are enlarged for easier recognition.
3. LED status indication modification
   - Standardizes the corresponding status indication of the LED. For for detailed information, refer to the manual of the corresponding firmware version.
4. Adjust the automatic shutdown function.
   - When the transmitter voltage is lower than 3.4V, the transmitter will perform automatic shutdown after the voice prompt "The transmitter voltage is low, and will automatically shut down".
5. Menu layout
   - Splits the original **Models** menu into **Model select** and **Models**.
   - Splits the original **Rate and exp** function into **Func. Rate (AFR)**and **DR setup**.
   - Splits the original **Throttle Down** function into **Throttle cut** and **Idle up**.
   - Modifies the **Range test** in **System** function. This function is available only when FRM301 is selected for **RF setting**.
6. **Disp servos**
   - The interface is added with all channels display page. It is displayed by default. Only the number of channels and percentage are displayed.
7. **Func assign**
   - Moves **Trim Mode**, **Trim Rate** from the trim setup interface to this function. That is, take the function as the setting object. Each function can be set with different trim mode/trim rate.
   - Add **Trim setting** button on the trim assignment interface. Click and enter the trim setting interface, The **Trim rate** and the**Trim mode** are displayed. You can click to set them.
   - The assigned and unassigned controls/trims are displayed separately on the **Control Preview** and **Trim Preview** interface (Icon in red means assigned).
   - The change of channel travel/range does not affect the trim volume. The trimming rate determines the trim volume.
8. **Trim**
   - The buttons that are not set as trim in the **Function Assign** also always show the value. For all of them, you can click to enter the

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Modified functions:

interface to set.

- Move the setting items of **Trim rate** and **Trim mode** to the **Function assign** interface. Set to the unbound controls. You can set different trim modes and trim rates when the same control is assigned to different functions.
- The setting for the trim adjustment of current condition/all condition is switched from icon to content area clicking. In this way, the setting items can be displayed visually.

9. **Sensor**
   - Adds eight sensors that can be set **Alarm**, and the set **Alarm** values are always displayed. According to the sensor types, you can set two (both smaller than/both greater than/one greater than and the other smaller than) alarm values. You can choose both alarms to turn on or set one to turn on.
10. **Model select**
    - Integrates **Model Select** and **Copy Model** from the original **Models** function into this function. Changes the default 20 groups of models into a default group, to allow users to create new models to increase the number of models (up to 18 groups)
11. **Models**
    - The functions of **Model name**, **Stick mode**, model structure setting and **Restore the current model** in the original model settings are put in this menu.
    - New UI design matches the function setting, and the well-designed graphic wizard guides to the related settings of model structure.
    - You can set the model for the currently used models (You can modify the model name, type, wing type, etc.).
12. **Condition**
    - All models support the **Condition** function.
    - The interface is changed from the original 5 groups to only one group by default. Users can create up to five groups as required.
    - Supports users to change the priority of conditions by adjusting the condition sequence and setting it as default.
    - You can copy/create new modes, and delete any unused modes.
13. **Func. Rate** and **DR setup**
    - The original rate and curve functions are deleted, and the function rate menu and DR settup function replace and surpass the original menu function.
    - Modifies interface display, and add real-time position and rate display in function setting interface.
    - Modifies operation rules. Setting operations are designed for all functions, including auxiliary functions, assigned to the channel. In the original version, the operation is only for controls.

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Modified functions:

- Modifies adjustment logic: added an offset setting option. In the process of offset adjustment, the whole variable line moves on Y axis.
- Adds line type selection interface: the setting of the throttle’ s not return to neutral as a line type, and all function curves can be set to different line types.
- Replaces curve switch with **DR setup**, and the restriction that one function can be set with only 2 groups of dual ratios is lifted. All functions functions without main control variables are not supported can be defined as dual ratios, and 10 groups of dual ratios are available for definition in total.
- Each group of DR can be set with corresponding function, switch and enable condition.

14. **Pro. mixes**
    - Moves the special mixes of original **Mixes** to the funtion mixes of the corresponding **Master**, such as, **Rudd** to **EILE** function for airplane model is moved to **RUDD** function, and the **Mixes** is changed to **Pro. mixes**.
    - Removes the original **Curve mixes** and **line mixes**. It is up to ten sets of Mixes, and the setting mode is similar to the orginal mixes.
    - Optimizes the setting of Mixes rate. the selected point will be highlighted, and **Offset** item is added.
    - The function algorithm mode is changed. For Master, it can be set to one of controls or one of functions defined to the channnels (including auxiliary functions), and for Slave, it can be set one of functions.
    - Adopts a brand-new interface, added some new functions, such as **Mix delay**, **Link**, and **Trim**.
15. **Servo speed**
    - Changes the original **Delay setting** to **Servo speed**, and change the menu interface language, to better distinguish different setting methods.
    - Adds the **In speed** and **Out speed**. You can define the symmetrical/ linear start recovery reference.
16. **Throttle cut**
    - Modifies the original **Throttle cut** function in the original **Throttle down** function. You are allowed to set the throttle cut position that is below the lowest throttle position.
    - Adds **throttle threshold** function, you can set a positon to trigger the throttle cut function.
17. **Idle up**
    - Modified the **Idle up** function algorithm mode in the original **Throttle down** function. You can lower/raise the idle speed.
18. **Throttle needle** and **Pitch curve**
    - Modifies the functional computing to support separate allocation of

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Modified functions:

controls and unbound with the throttle.

19. **Airplane** and **Glider** modification:
    - Airfoil-related settings: Based on the main function control, integrate the mixing with other functions in the setting menu. For example, **Aileron** and **Flap**.
    - Optimizes part of the menu interfaces. Arranges the switch assignment portals of many functions in the content, to directly display the names of assigned controls and status.
    - The setting method of a tailless airplane is integrated under **Airplane**/**Glider**.
20. Helicopter
    - The **Throttle mixed** and **Swashplate** functions are removed from the **Mixes** as separate setting functions.
    - Modifies the switch assignment for Gyroscope function. It is not assigned in function assignment. Click on switch assignment button in the function menu. Only assignment switch is supported.
21. **Logic switches**
    - Adds a new group of logic switches, which are changed from the original 3 groups to 4 groups. In the **Logic switches**, select a logic switch for another setting of logic switch.
22. **Trainer mode**
    - Adapts to the new functions. The UI is modified.
23. **RX setting**
    - Modifies menu order.
    - Adds i-BUS2 device display setting option, and all connected i-BUS2 devices are displayed in this menu. Once connected, the corresponding i-BUS2 devices can be set in the **RX setting** menu.
    - As RF system can now be set before binding, the receiver bind item is changed to the bind setting interface. The bind button is in the **Bind setting** interface.
    - Removes the **Range Test** menu, and it is moved to **System** menu.
    - The **RX protocol** is changed to **Custom port protocol**, and the page is modified to select protocols as per the interface. There are different settings and protocol options for different receivers. It's not required to connect receiver for setting. You can perform setting whether or not the receiver is connected.
    - The **Configure the slave** menu is removed, and added instead a new function to **Configure RX as a PWM converter**.
    - The **Servo midpoint** is changed to **Midpoint offset**, and the options become **Offset(1520)** and **No offset(1500)**.
    - The **RX voltage monitor** is changed to **Low voltage voice alarm**, and the receiver voltage is not displayed any more. The function is used to set the voice alarm voltage only, and the interface message is changed

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Modified functions:

to indicate the function.

- The **Low signal alarm** is changed to **Low signal voice alarm**. As users cannot tell the alarm effect in the sensor alarm setting, the word 'voice' is added to indicate the alarm is voice.
- **Sevro frequency** function is changed to **PWM frequency**.

24. Optimization of power-on interface:
    - The power-on interface is redesigned and changed to color logos. Colorful interfaces will bring you a better experience.
25. Optimization of RF setting menu
    - The setting menu RF module version information, RF module firmware update, PPM setting that you enter by clicking on the corresponding RF type setting options in the previous version is moved to the same level, so you can now find them easily.
    - Moved the setting of One-way/Two-way RF communication to the Bind setting interface.
26. Spoiler
    - Adds elevator setting in Spoiler. You can set the compensation of the elevator when the spoiler changes.
27. Optimized enable/disable icons
    - Changes enable/disable function to a state switch with both current state display and click instructions.

Special changes:

1. **Supports up to 18 groups of models.**
2. **When the binding is between one receiver and different models, the model bound last time, when one-way/two-way setting is the same, may not be memorized. In the new bind setting function, different settings can be used to configure the receivers to bind, and will bar the receiver from connected via the previous settings, unless the original configuration is restored and rebound successfully.**

Notes:

1. Removes the **Throttle type** function. In the calibration, place the throttle stick in the neutral position and then start to calibrate. During the calibration operation, the neutral position is identified.
2. In the new version, the **Program mixes** superposition may exceed the travel endpoints. When setting the **Channel route**, you must confirm the **UP end** and **DW end** values within the safe range of the servo.
3. About model data inheritance: Model data of earlier versions can not be imported to later version. Re-bind and set model data after update.
4. RF library is updated in this version. After upgrade of transmitter firmware, you need to upgrade RF

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Notes:

module firmware and receiver firmware. Follow the instructions below for update:

- Upgrades FRM301 firmware which is attached to the transmitter :

  After firmware upgrade, turn the transmitter on and you will find the system has a boot wizard. Follow the instructions to upgrade the RF module. If the RF is not connected, or any other circumstances arise, you need to click on the transmitter menu to complete the upgrade. When the transmitter is turned on and the RF module is connected and activated, click on the **RF setting**, select **FRM301** for **RF type**, and then click **RF firmware update** to upgrade.

- Upgrades the receiver firmware:

  1. The receiver firmware packed with transmitter firmware, with the receiver having entered into update state, can be directly updated in the transmitter side via RX setting menu according to the selected model.

  2. Use computer software "Flysky Assistant" to update with the transmitter. As the update of this version involves RF library update, you need, after version update, a forced update for the receiver. Forced update requires that the receiver enter the forced update state. Later, it can be updated normal state, that is, when the transmitter and receiver can bind normally, then update the receiver firmware at the transmitter side.

5. For the cooperation of computer software "Flysky Assistant" with the transmitter, all operations are performed on computer, and you have only to keep the transmitter connected to it. The USB device, once recognized by a computer software, cannot be recognized by other software. You may need to shut down devices not in use. This version is fully compatible with Flysky Assistant, but the transmitter remains the same in the method to update firmware of receiver/transmitter. The latest firmware of the FTr8B enhanceded version series receivers is packaged in it. But you can still use the corresponding functions in the old way.
6. The new firmware is added with a variety of RF settings, but they may not be applicable to all receivers. Classic version receivers, such as FTr10/FTr16S, only support classic 18CH RF settings. If you need other configurations, please purchase the enhanced series receivers, such as FTr8B.