



Payload SDK Technical Integration Notes

Matrice 200 Series

Category	Items	Requirements
Basic Items	Working current	$\leq 4000\text{mA}$
	Operation Temperature of the Payload Case	$\leq 70^{\circ}\text{C}$
	Weight	$\leq 1200\text{g}$ (If payload weight is between 600 and 1200g, it must be mounted on dual gimbal connectors of drones and gravity center of the payload should be located at the center line of dual gimbal connectors.)
	Center of Gravity	Unless otherwise specified, regardless of the working condition of the payload, the center of gravity should always be located at the vertical line of center of the gimbal connector.
	Structural Interference	When the aircraft is in various flight states, the payload can not interfere with the aircraft structure under various working conditions (the propellers shape will change during flight and the payload will have a certain motion lag relative to the aircraft during flight).
	Dimension	Under various working conditions, impact on the drone's inertia should be minimized. Operators should minimize the volume and dimension of the payload.
	Movement Position	The payload should not enter the field of view of the vision sensor, ultrasonic sensor, infrared sensor and the affected area of front air inlet and rear air outlet of fuselage under various working conditions. The forward vision sensor has a 75° horizontal field of view and a 60° vertical field of view. The downward vision sensor has a 75° field of view from left to right and a 60° field of view from nose to rear. The ultrasonic sensor has a 100° vertical field of view within a 10 cm range and 70° outside of a 10 cm range. The infrared sensor has a 60° vertical field of view within a 15 cm range, and 20° outside of 15 cm. The affected area of front air inlet and rear air outlet of fuselage is within 5cm of the air inlet and air outlet.
Data Bandwidth	Vibration	Payload exposure to vibration should be minimized. When the aircraft is turned on, the IMU cannot register as "Moving" on the "Sensors State" page of the DJI PILOT app under various working conditions.
	Command Channel Upstream Data Bandwidth	$\leq 500\text{B/s}$
	Command Channel Downlink Data Bandwidth	$\leq 3072\text{B/s}$
	Network Port Data Bandwidth	$\leq 4096\text{Kbps}$ (Using aircraft with dual gimbals) $\leq 8192\text{Kbps}$ (Using aircraft with single gimbal)



Payload External Pin Electrical Specifications	PPS Pin	$0 < \text{Pin voltage} \leq 3.3\text{V}$
	Power Supply Pin	Cannot cause the power supply pin to be short-circuited. Cannot be connected to the power supply output system at the power supply pin. Cannot sink current into the aircraft.
	UART Interface Pin	Electrical specifications should comply with the 3.3V TTL level protocol.
	CAN Interface Pin	Electrical specifications should comply with the CAN standard protocol.
	LAN Interface Pin	Electrical specifications should comply with the LAN IEEE802.3 standard protocol
Electromagnetic and Acousto-optic Noise	Acoustic Noise	The payload cannot transmit or generate 35~45KHz band sound waves.
	Light Source Flashing	If the payload is built-in a light source, the light source flashing frequency of the payload cannot be between 0.2 and 50 Hz.
	Light Wave Emission	The payload cannot emit light with wavelengths between 600 and 700 nm.
	Magnetic Field	The payload should minimize magnetic interference, including but not limited to interference created by ferromagnetic substances producing high-intensity alternating magnetic fields.
	Electromagnetic Noise	The payload should not transmit electromagnetic waves in the 1 - 1.7 GHz, 2.4 - 2.5 GHz, and 5.8 - 5.9 GHz bands. The equivalent isotropic radiated power (EIRP) of the payload should be less than 1W.



Matrice 200 V2 Series

Category	Items	Requirements
Basic Items	Working current	$\leq 4000\text{mA}$ (Skyport / Skyport V2) $\leq 2000\text{mA}$ (X-Port)
	Operation Temperature of the Payload Case	$\leq 70^{\circ}\text{C}$
	Weight	$\leq 1200\text{g}$ (If payload weight is between 600 and 1200g, it must be mounted on dual gimbal connectors of drones and gravity center of the payload should be located at the center line of dual gimbal connectors.)
	Center of Gravity	Unless otherwise specified, regardless of the working condition of the payload, the center of gravity should always be located at the vertical line of center of the gimbal connector.
	Structural Interference	When the aircraft is in various flight states, the payload can not interfere with the aircraft structure under various working conditions (the propellers shape will change during flight and the payload will have a certain motion lag relative to the aircraft during flight).
	Dimension	Under various working conditions, impact on the drone's inertia should be minimized. Operators should minimize the volume and dimension of the payload.
	Movement Position	The payload should not enter the field of view of the vision sensor, ultrasonic sensor, infrared sensor and the affected area of front air inlet and rear air outlet of fuselage under various working conditions. The forward vision sensor has a 75° horizontal field of view and a 60° vertical field of view. The downward vision sensor has a 75° field of view from left to right and a 60° field of view from nose to rear. The ultrasonic sensor has a 100° vertical field of view within a 10 cm range and 70° outside of a 10 cm range. The infrared sensor has a 60° vertical field of view within a 15 cm range, and 20° outside of 15 cm. The affected area of front air inlet and rear air outlet of fuselage is within 5cm of the air inlet and air outlet.
	Vibration	Payload exposure to vibration should be minimized. When the aircraft is turned on, the IMU cannot register as "Moving" on the "Sensors State" page of the DJI PILOT app under various working conditions.
Data Bandwidth	Command Channel Upstream Data Bandwidth	$\leq 500\text{B/s}$
	Command Channel Downlink Data Bandwidth	$\leq 4096\text{B/s}$
	Network Port Data Bandwidth	$\leq 4096\text{Kbps}$ (Using aircraft with dual gimbals) $\leq 8192\text{Kbps}$ (Using aircraft with single gimbal)



Payload External Pin Electrical Specifications	PPS Pin	$0 < \text{Pin voltage} \leq 3.3\text{V}$
	High Power Apply Pin	$0 < \text{Pin voltage} \leq 3.3\text{V}$
	Power Supply Pin	Cannot cause the power supply pin to be short-circuited. Cannot be connected to the power supply output system at the power supply pin. Cannot sink current into the aircraft.
	UART Interface Pin	Electrical specifications should comply with the 3.3V TTL level protocol.
	CAN Interface Pin	Electrical specifications should comply with the CAN standard protocol.
	LAN Interface Pin	Electrical specifications should comply with the LAN IEEE802.3 standard protocol
Electromagnetic and Acousto-optic Noise	Acoustic Noise	The payload cannot transmit or generate 35~45KHz band sound waves.
	Light Source Flashing	If the payload is built-in a light source, the light source flashing frequency of the payload cannot be between 0.2 and 50 Hz.
	Light Wave Emission	The payload cannot emit light with wavelengths between 600 and 700 nm.
	Magnetic Field	The payload should minimize magnetic interference, including but not limited to interference created by ferromagnetic substances producing high-intensity alternating magnetic fields.
	Electromagnetic Noise	The payload should not transmit electromagnetic waves in the 1 - 1.7 GHz, 2.3 - 2.6 GHz, and 5.7 - 5.9 GHz bands. The equivalent isotropic radiated power (EIRP) of the payload should be less than 1W.



Matrice 300 RTK

Category	Items	Requirements
Basic Items	Working current	≤4000mA (Skyport / Skyport V2) ≤2000mA (X-Port)
	Operation Temperature of the Payload Case	≤70°C
	Weight	Ensure that the weight of all mounted equipment is lower than the max load weight of drone; meet the max takeoff weight requirement; payload weight carried by a single gimbal connector is less than 850g when using the official gimbal bracket (including PSDK adapter). (For other related information, please refer to the M300 RTK model manual)
	Center of Gravity	Center of gravity should always be located at vertical line of center of gimbal connector when using the official gimbal bracket
	Structural Interference	When the aircraft is in various flight states, the payload can not interfere with the aircraft structure under various working conditions (the propellers shape will change during flight and the payload will have a certain motion lag relative to the aircraft during flight).
	Dimension	Under various working conditions, impact on the drone's inertia should be minimized. Operators should minimize the volume and dimension of the payload.
	Movement Position	The payload should not enter the field of view of the vision sensor, infrared sensor and the affected area of bottom air inlet and top air outlet of fuselage under various working conditions. The forward and backward vision sensors has a 70° horizontal field of view and a 56° vertical field of view. The upward vision sensor has a 64° field of view from left to right and a 79° field of view from nose to rear and downward vision sensor has a 56° field of view from left to right and a 70° field of view from nose to rear. The left and right vision sensors has a 79° horizontal field of view and a 64° vertical field of view. The field of view of the six-way infrared sensors is 30°. The affected area of bottom air inlet and top air outlet of fuselage is within 5cm of the air inlet and air outlet.
	Vibration	Payload exposure to vibration should be minimized. When the aircraft is turned on, the IMU cannot register as "Moving" on the "Sensors State" page of the DJI PILOT app under various working conditions.



Payload External Pin Electrical Specifications	PPS Pin	$0 < \text{Pin voltage} \leq 3.3\text{V}$
	High Power Apply Pin	$0 < \text{Pin voltage} \leq 3.3\text{V}$
	Power Supply Pin	Cannot cause the power supply pin to be short-circuited. Cannot be connected to the power supply output system at the power supply pin. Cannot sink current into the aircraft.
	UART Interface Pin	Electrical specifications should comply with the 3.3V TTL level protocol.
	CAN Interface Pin	Electrical specifications should comply with the CAN standard protocol.
	LAN Interface Pin	Electrical specifications should comply with the LAN IEEE802.3 standard protocol
Electromagnetic and Acousto-optic Noise	Light Source Flashing	If the payload is built-in a light source, the light source flashing frequency of the payload cannot be between 0.2 and 50 Hz.
	Light Wave Emission	The payload cannot emit light with wavelengths between 600 and 700 nm.
	Magnetic Field	The payload should minimize magnetic interference, including but not limited to interference created by ferromagnetic substances producing high-intensity alternating magnetic fields.
	Electromagnetic Noise	The payload should not transmit electromagnetic waves in the 1 - 1.7 GHz, 2.3 - 2.6 GHz, and 5.7 - 5.9 GHz bands. The equivalent isotropic radiated power (EIRP) of the payload should be less than 1W.



Payload SDK 负载技术要求

Matrice 200 系列

类别	项目	指标要求
基本项目	工作电流	$\leq 4000\text{mA}$
	工作时外壳温度	$\leq 70^{\circ}\text{C}$
	重量	$\leq 1200\text{g}$ (如果负载重量介于 600~1200g 之间, 须挂载于双云台机型的双云台接口且负载重心处于双云台口中点垂线上)
	重心	无特殊说明情况下, 负载处于各种工况时, 重心应位于云台口中点垂线上
	结构干涉	飞机处在各种飞行状态时, 负载处于各个工况均不能与飞机结构发生干涉 (飞机在飞行时, 桨叶会发生一定形变, 飞机运动时负载相对于飞机会出现一定的运动滞后)
	尺寸	负载处于各种工况时, 应保证对飞机的转动惯量影响最小, 尽量减小负载的体积与尺寸
	运动位置	负载处于各个工况均不能进入视觉传感器、超声波传感器、红外传感器的视场范围与尾部出风口的受影响范围。前视视觉传感器的视场角为 $75^{\circ} \times 60^{\circ}$ (水平*竖直), 下视视觉传感器的视场角为 $75^{\circ} \times 60^{\circ}$ (横向*纵向)。垂直方向上距离超声波传感器 10cm 范围内超声波传感器的视场角为 100° , 10cm 范围外视场角为 70° 。垂直方向上距离红外传感器 15cm 范围内红外传感器视场角为 60° , 15cm 范围外视场角为 20° 。尾部出风口的受影响范围为距离出风口 5cm 以内的空间
数据带宽	振动	负载应保持尽量低的振动能量。飞机开机不起飞时, 负载处于各种工况下, 在 DJI PILOT 的“传感器状态”页面上不能观察到 IMU 出现“不静止”状态
	命令通道上行数据带宽	$\leq 500\text{B/s}$
	命令通道下行数据带宽	$\leq 3072\text{B/s}$
负载对外引脚电气特性	网口数据带宽	$\leq 4096\text{Kbps}$ (双云台飞机) $\leq 8192\text{Kbps}$ (单云台飞机)
	PPS 引脚	引脚电压 $\leq 3.3\text{V}$ 且 > 0
	供电引脚	不能造成供电引脚短路, 不能在供电引脚连接电源输出系统, 不能向飞机内部灌电流
	UART 接口引脚	电气特性应遵循 3.3V TTL 电平协议规定
	CAN 接口引脚	电气特性应遵循 CAN 标准协议规定
电磁与声光噪声	LAN 接口引脚	电气特性应遵循 LAN IEEE802.3 标准协议规定
	声波噪声	负载不能发射或产生 35~45KHz 频带内的声波
	光源闪烁	负载光源的闪烁频率不能处于 0.2~50Hz 之间
	光波发射	负载不能发射波长处于 600~700nm 之间的光波
	磁场	负载应保证对飞机造成尽量小的磁干扰, 包含但不限于不能带有强磁性物质, 不能产生高强度交变磁场
	电磁波噪声	负载不能发射 1~1.7GHz、2.4~2.5GHz、5.8~5.9GHz 频带的电磁波, 负载的等效全向辐射功率 (EIRP) 应小于 1W



Matrice 200 V2 系列

类别	项目	指标要求
基本项目	工作电流	≤4000mA (Skyport / Skyport V2) ≤2000mA (X-Port)
	工作时外壳温度	≤70℃
	重量	≤1200g (如果负载重量介于 600~1200g 之间, 须挂载于双云台机型的双云台接口且负载重心处于双云台口中点垂线上)
	重心	无特殊说明情况下, 负载处于各种工况时, 重心应位于云台口中点垂线上
	结构干涉	飞机处在各种飞行状态时, 负载处于各个工况均不能与飞机结构发生干涉 (飞机在飞行时, 桨叶会发生一定形变, 飞机运动时负载相对于飞机会出现一定的运动滞后)
	尺寸	负载处于各种工况时, 应保证对飞机的转动惯量影响最小, 尽量减小负载的体积与尺寸
	运动位置	负载处于各个工况均不能进入视觉传感器、超声波传感器、红外传感器的视场范围与尾部出风口的受影响范围。前视视觉传感器的视场角为 75°*60° (水平*竖直), 下视视觉传感器的视场角为 75°*60° (横向*纵向)。垂直方向上距离超声波传感器 10cm 范围内超声波传感器的视场角为 100°, 10cm 范围外视场角为 70°。垂直方向上距离红外传感器 15cm 范围内红外传感器视场角为 60°, 15cm 范围外视场角为 20°。尾部出风口的受影响范围为距离出风口 5cm 以内的空间
	振动	负载应保持尽量低的振动能量。飞机开机不起飞时, 负载处于各种工况下, 在 DJI PILOT 的“传感器状态”页面上不能观察到 IMU 出现“不静止”状态
数据带宽	命令通道上行数据带宽	≤500B/s
	命令通道下行数据带宽	≤4096B/s
	网口数据带宽	≤4096Kbps (双云台飞机) ≤8192Kbps (单云台飞机)
负载对外引脚电气特性	PPS 引脚	引脚电压≤3.3V 且>0
	高功率申请引脚	引脚电压≤3.3V 且>0
	供电引脚	不能造成供电引脚短路, 不能在供电引脚连接电源输出系统, 不能向飞机内部灌电流
	UART 接口引脚	电气特性应遵循 3.3V TTL 电平协议规定
	CAN 接口引脚	电气特性应遵循 CAN 标准协议规定
	LAN 接口引脚	电气特性应遵循 LAN IEEE802.3 标准协议规定
电磁与声光噪声	声波噪声	负载不能发射或产生 35~45KHz 频带内的声波
	光源闪烁	负载光源的闪烁频率不能处于 0.2~50Hz 之间
	光波发射	负载不能发射波长处于 600~700nm 之间的光波
	磁场	负载应保证对飞机造成尽量小的磁干扰, 包含但不限于不能带有强磁性物质, 不能产生高强度交变磁场
	电磁波噪声	负载不能发射 1~1.7GHz、2.3~2.6GHz、5.7~5.9GHz 频带的电磁波, 负载的等效全向辐射功率 (EIRP) 应小于 1W



Matrice 300 RTK

类别	项目	指标要求
基本项目	工作电流	≤4000mA (Skyport / Skyport V2) ≤2000mA (X-Port)
	工作时外壳温度	≤70℃
	重量	保证所有挂载设备重量低于无人机最大载重；符合最大起飞重量限制；使用官方云台支架时单个云台接口承受的负载重量小于 850g（包含 PSDK 适配器） （其他相关信息请查看 M300 RTK 机型说明书）
	重心	使用官方云台支架时负载重心处于云台接口中心垂线上
	结构干涉	飞机处在各种飞行状态时，负载处于各个工况均不能与飞机结构发生干涉（飞机在飞行时，桨叶会发生一定形变，飞机运动时负载相对于飞机会出现一定的运动滞后）
	尺寸	负载处于各种工况时，应保证对飞机的转动惯量影响最小，尽量减小负载的体积与尺寸
	运动位置	负载处于各个工况均不能进入视觉传感器、红外传感器的视场范围、机身底部进风口与顶部出风口的受影响范围。前视与后视视觉传感器的视场角为 70°*56°（水平*竖直），上视视觉传感器的视场角为 64°*79°（横向*纵向），下视视觉传感器的视场角为 56°*70°（横向*纵向），左视与右视视觉传感器的视场角为 79°*64°（水平*竖直）。六向红外传感器的视场角为 30°。机身底部进风口与顶部出风口的受影响范围为距离进风口与出风口 5cm 以内的空间
负载对外引脚电气特性	振动	负载应保持尽量低的振动能量。飞机开机不起飞时，负载处于各种工况下，在 DJI PILOT 的“传感器状态”页面上不能观察到 IMU 出现“不静止”状态
	PPS 引脚	引脚电压≤3.3V 且>0
	高功率申请引脚	引脚电压≤3.3V 且>0
	供电引脚	不能造成供电引脚短路，不能在供电引脚连接电源输出系统，不能向飞机内部灌电流
	UART 接口引脚	电气特性应遵循 3.3V TTL 电平协议规定
	CAN 接口引脚	电气特性应遵循 CAN 标准协议规定
电磁与声光噪声	LAN 接口引脚	电气特性应遵循 LAN IEEE802.3 标准协议规定
	光源闪烁	负载光源的闪烁频率不能处于 0.2~50Hz 之间
	光波发射	负载不能发射波长处于 600~700nm 之间的光波
	磁场	负载应保证对飞机造成尽量小的磁干扰，包含但不限于不能带有强磁性物质，不能产生高强度交变磁场
	电磁波噪声	负载不能发射 1~1.7GHz、2.3~2.6GHz、5.7~5.9GHz 频带的电磁波，负载的等效全向辐射功率（EIRP）应小于 1W