

Item	Function	Potential failure	Potential effects of failure	Severity	Potential causes of failure	Occurrence	Current controls for prevention/detection	Detectence	RPN
Motor	Drives the propeller	Bearing/short circuit/lose magnet	Copter crashes	5	Over current, bad maintance	1	Regular checkups before start	5	25
		External damage	Copter crashes	5	Lose rocks, impacts	1	NONE	5	25
ESC	Power to motor	Component failure	Copter crashes	5	Bad components, over current	1	NONE	5	25
		Lost communication with Flightcontroller	Copter crashes	5	Connector problem, software problem	2	Test of communication at startup	2	20
Flightcontroller	Flight management unit	Lost connection with MCU	Copter crashes	5	Software problem, connector/cable problem	2	Software check of connection before take off and contionously while flying.	1	10
		Lost communication with sonar	No land or hovering function.	4	Software problem, connector/cable problem	2	Checks connection continously in software	2	16
Battery	Supplies power to the copter	Battery empty	Copter crashes	5	Too long flight, not charged before takeoff	1	Battery monitoring.	1	5
Laserscanner	Mapping of environment	Lost connection with Laserscanner	Loss of data for mapping	1	Broken slip ring, bad connection, sfotware problem	2	Checks connection continously in software	1	2
Sonar	Collision avoidance	Bad data	Unreliable collision avoidance	4	Echo, disturbances, hardware fault	3	Unreasonable data, switch to manual mode.	2	24
IMU	Position of copter for mapping	Lost connection with MCU	Loss of positioning data	1	Software problem, connector/cable problem	2	Checks connection continously in software	1	2
MCU	Main Controlling Unit	Stops working	Copter crashes	5	Software problem, hardware problem	2	Nothing	5	50
UWB Radio	Ranging data	Lost connection with reciever	Loss of ranging data	1	Software problem, hardware problem	4	Checks connection continously in software	2	8
WiFi	Wireless streaming of da	Lost connection with MCL	Loss of all data stream.	2	Software problem, connector/cable probl	2	Checks connection continously in software	2	8

Scale	Severity	Occurrence	Detectence
1	Loss of some data	Should Never happen	Will be detected
2	Loss of all data	Will almost never happen	Will mostly be detected
3	Componont failure	Can happen	Will sometimes be detected
4	Potential copter crash.	Likely to happen	Can be detected
5	Total crash, loss of copte	Will happen	Won't be detected