

P	FAILURE	FUNCTION	FAILURE MODE	EFFECTS	CAUSES	CONTROL	ACTIONS
HARDWARE							
P1	Touch-screen	Enables the user to interact. It works as an input (using finger or stylus).	Unresponsive: does not get users' inputs or respond accurately.	Actions are not executable. User dissatisfied.	Hardware fault: user's behavior; physical damage (e.g., dropped device); frequent touch. Software issue: system and operation issues.	Tests & examinations	More supervision; better material; sensitiveness improvement; quality design of built-in apps improvement.
P2	Battery	Energy and sustainability to the device.	It drains quickly; the device does not hold the charger and cannot charge; overheating.	User dissatisfied; device reboots on its own; explosion risk.	Extreme temperatures; battery type; user negligence.	Tests & examinations	Improving chips; more efficient OSs; improving battery quality; replacing the actual ones with more effective ones.
P3	Device shell	Covers/protects the elements inside of the device.	Easily damaged after dropped.	User dissatisfied; device becomes more damaged over time.	User's negligence; inadequate material quality; design errors from the manufacturing side.	Tests & examinations	More supervision; selecting the appropriate material or improving it.
P4	Front camera	Taking selfies	Not working properly.	User dissatisfied and annoyed.	App problem	Tests & examinations	More supervision; improving default app.
P5	Rear camera	Taking pictures	Not working properly.	User dissatisfied and annoyed.	App problem	Tests & examinations	More supervision; improving default app.
P6	Micro-phones	Transmitting user's voice to the other person(s); video recording; inputting voice indication; used for voice commands, assistants, music recognition apps.	Static sound in audio output; background noises; audio cut offs; distant sound; stop working.	User dissatisfied and annoyed; over time, they can become unfunctional.	Software fault: software bugs, system flaws; corrupted files and apps; configuration issues; accessories (e.g., head-phones). OR Hardware damage: physical damage of the mic component.	Tests & examinations	More supervision; quality improvements of the components.
P7	Power button	Used to lock the screen; used together with volume control buttons to take screenshot and to switch the device off and on.	Sometimes does not get the user command properly.	User dissatisfied and annoyed; over time, it can be more depreciated.	User's negligence; quality; manufacturing errors.	Tests & examinations	More supervision; quality improvement.
P8	Volume control buttons	Used to adjust the volume; together with the power button to take screenshot and to switch the device off and on.	Sometimes does not get the user command properly.	User dissatisfied and annoyed; over time, can be more depreciated.	User's negligence; quality; manufacturing errors.	Tests & examinations	More supervision; quality improvement.
P9	Charger port	Used to charge the device.	Over time can be damaged and the device cannot be charged.	User dissatisfied and annoyed; over time can be more depreciated.	Bad use from the user; hardware can be damaged due to physical or liquid damage.	Tests & examinations	More supervision; quality improvement.
SOFTWARE							
P10	Freeze		Malfunction	The required function becomes inoperable; inappropriate output.	Due to the increase on operations; insufficient memory capacity; less software quality.	Tests & examinations	Selection of proper and reliable software; more supervision
P11	Self-shut-down		Sudden or frequent shutdown of device.	User dissatisfied and annoyed; not easy to continue the activity.	Poor battery; software issues; Segmentation fault (memory access violation error).	Tests & examinations	Batteries inspections; more supervision.
P12	Output failure		No output	User dissatisfied and annoyed.	Hardware problem due to the touchscreen or software faults.	Tests & examinations	Increased caution; more supervision.

P	FAILURE	S	O	D	RPN
P1	Touchscreen	10	6	6	360
P2	Battery	10	5	5	250
P3	Device shell	5	7	4	140
P4	Front camera	8	4	3	72
P5	Rear camera	8	3	3	72
P6	Microphones	10	1	3	30
P7	Power button	9	1	2	18
P8	Volume control buttons	7	1	2	14
P9	Charger port	10	3	6	180
P10	Freeze	9	6	6	324
P11	Self-shut-down	9	3	2	54
P12	Output failure	8	4	4	128

P	FAILURE	S	O	D	RPN
P1	Touchscreen	10	4	5	200
P2	Battery	10	6	5	300
P3	Device shell	5	6	5	150
P4	Front camera	7	2	3	42
P5	Rear camera	6	3	2	36
P6	Microphones	9	4	6	216
P7	Power button	9	1	2	18
P8	Volume control buttons	8	1	2	16
P9	Charger port	10	3	6	180
P10	Freeze	7	5	5	175
P11	Self-shut-down	9	3	2	54
P12	Output failure	8	3	2	48