label	Requirement Category	Requirement	Source of requirement	Acceptance criteria (qualitative description)	Metrics	Acceptable metrics	Unacceptable failure modes	Source of metrics? (Default is Vx ERD)	Followup if failures are seen?	Destructive?	Subsystems to test	Priority to test	Order of Testing, roughly	Estimated time to test (min)
1	Usability, MCM storage	Easy to stow	ERD	Effective place to store cords. Ease of closing and locking the case. Stability on flat surfaces.	1. Is it **easy to store the power cord** (or other materials) in its intended place? Judgement call from staff, based on level of intuitiveness, time to complete, number of steps needed, and level of protrusion of cord or other items from the system. 2. **Time to close and lock case.** 3. Rest the MCM on a stable flat surface, on its bottom face, and its back face. **Is it stable resting on its bottom face and back face?** Stable = no movement observed, won't fall over with light touches.	1. yes 2. <5 sec 3. yes	1. no, takes too long, too many steps, too many tries to get it right, cord sticks out too much 2. >=5 sec 3. no, falls over or wobbles with light touch	2. v3.1 and v4 prototype is very quick	Discuss design options or procedural/documentation requirements			high	2	5
2	Usability, MCM storage	Easy to carry when closed	ERD	Effective and intuitive grip points. Small enough size and weight.	1. Is the closed MCM able to be **carried with one hand** comfortably? 2. Is the closed MCM able to be **carried with 2 hands** comfortably in multiple ways? (2 hands on handle, 2 hands on alternate grip points, etc) 3. **Dimensions of closed MCM**, with all items stowed 4. **Weight of closed MCM** with all items stowed (duplicate metric with Ballot Receptacle acceptance criteria)	1. yes 2. yes 3. <30" in any dimension 4. <40 lbs, but ideally <30 lbs	1. no 2. no 3. any dimension >=30" 4. >=40 lbs	v3 and v4 prototypes previously outperformed given metrics	Design changes			high	3	5
3	Usability, MCM storage	Must stack multiple units effectively and safely	ERD, indirectly VVSG	Stacks safely up to 4 ft high. Stacks can be secured during transportation.	For these tests, only stack scanners in the vertical direction (z-axis) of the case, right-side-up, and not in any other direction, such that the left, right, front, and back faces of the scanners align within 1 cm. MCMs shall be stacked on level and solidly supported surfaces. 1. Stack 2 MCMs as intended with top and bottom surfaces interlocking (or use simulated MCMs with the same outer surfaces and modified internal weights). Apply minor horizontal bumps (20 N or 5 lb push) on both scanners, on the front, back, left, and right sides, one at a time. Do the **2 MCMs remain stably stacked**, not moving out of alignment by more than 1 cm? Ensure that you take photos of the bottom MCM stacking faces (bottom and top) before testing, to compare to later. 2. Stack multiple MCMs (or simulated MCMs) no more than 4 feet high (or 6 VxScans of 8" height), around a protected area to catch any falling items. Apply minor horizontal bumps (20 N or 5 lb push) to the top of the stack. Do the **multiple MCMs remain stably stacked**, not falling over? 3. In a 4 ft high stack of MCMs (or simulated MCMs), **does the MCM on the bottom of the stack resist damage** from the weight on top? Inspect the bottom MCM for damage after previous stability testing, and compare to initial photos. 4. Are there reasonable **options for how to secure a stack** with tie-down straps or inside containers?	1. yes 2. yes 3. yes 4. yes	no on any. noticeably unstable stacks before any testing; no clear way to secure a stack down; damage seen on bottom MCM after stacking and stability testing	OSHA regulations on stacking	Discuss reducing maximum allowed stacking height; discuss design changes to improve stacking stability; discuss recommended strategies for securing	possibly, but use simulated MCMs to avoid	MCM	medium	5	60
4	Safety & Hazard Prevention, closed MCM	MCM case should not pose hazard to user or interfacing elements	VVSG indirectly	Minimal risk to hands and body parts from features	1. Are all features **smooth, finished, rounded, and not sharp**? 2. Do the features **avoid snagging** clothing and accessories? 3. Are there **minimal risks to eyes** or other body parts from parts in compression/tension? 4. Are **electronics sufficiently protected** from the user, and vice versa?	yes to all	no to any			no		medium	4	5
5	Cleanability	Easy to clean closed MCM	Vx	Resists damage from cleaning.	1. Can you clean all outer surfaces of the closed MCM with microfiber cloth and alcohol without causing damage? Check labels, grip points, and possible ports of ingress.	yes	no; peeling of labels, easy to cause cosmetic damage, etc		investigate design changes, labeling changes	no		low	6	10
6	Stability	Stable when on flat surface, not locked	Vx	Static tipping angle	1. Does the unit fall over easily when pushing on the touchscreen? Subjective judgment. 2. Find the minimum angle from gravity when the unit falls over on its own, when tilting it backward when the MCM is open as if pushing on the touchscreen.	1. no 2. 30 degrees or greater	1. yes 2. <30 degrees	v3.1 tips at 42 deg from gravity. VVSG 8.1-K hazard prevention	consult with other users if unsure. Discuss need for more design changes	no		low	1	10

label	Requirement Category	Requirement	Source of requirement	Acceptance criteria (qualitative description)	Metrics	Test Results	Summary results	Notes	Followup plan	Test Results, Vx (Bellingham)	Order of Testing, roughly	Estimated time to test (min)	Actual time (min)
4	Safety & Hazard Prevention, closed MCM	MCM case should not pose hazard to user or interfacing elements	VVSG indirectly	Minimal risk to hands and body parts from features	1. Are all features **smooth, finished, rounded, and not sharp**? 2. Do the features **avoid snagging** clothing and accessories? 3. Are there **minimal risks to eyes** or other body parts from parts in compression/tension? 4. Are **electronics sufficiently protected** from the user, and vice versa?	1. yes 2. yes 3. yes 4. yes	PASS						