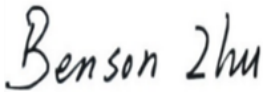


BENCHMARK- PERFORMANCE TEST REPORT

Applicant:	Positec Technology (China) Co., Ltd 18, Dongwang Road, Suzhou Industrial Park, Jiangsu 215123, P.R. China		
Report No.:	SHES260200276672	Issue Date:	2026-05-20
Test item description:	Robotic lawn mower		
Test performing date (s):	2026-02-10 to 2026-03-17		
Place of Testing	Carretera del golf, s/n, 08870 Sitges, Barcelona Spain		
Test Laboratory:	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China		
Kress EyePilot® RTKⁿ	Mower A	Mower B	Mower C
			

Test Specification:	Robotic Lawnmower Testing Plan Positec 20260108				
Test Result / Final overall rating:	Mower	Kress EyePilot® RTKⁿ	A	B	C
		Final score:	4.5	2.5	3.7
	According to the above-mentioned test specification and based on the weights of the corresponding test items, the final score is shown in the table above. See the details in the following report.				
Tested by:			Approved by:		
	Benson Zhu			David Pang	

This test report relates to the above-mentioned test samples. Without permission of the testing laboratory this report is not permitted to be duplicated in extracts. This test report only presents individual test results and does not authorize the use of any safety or certification mark on the product. This test report contains an assessment of the product, which is not always based on a continuous rating system, but on experience of the experts of SGS. This assessment does not constitute a legally binding confirmation that the product is free from defects. SGS's services and liability are governed by SGS's General Conditions of Service available at www.sgs.com

Overall Evaluation of Two-Wheel-Drive Robotic Lawn Mowers

No.	Test item	Weighting of each test item %	Based on the weights of the left column, the final score			
			Mower Kress EyePilot® RTK ⁿ	Mower A	Mower B	Mower C
1	Initial setup	5	4	3	3	3
2	Auto-mapping	10	4	n/a	3	3
3	Manual mapping	5	4	4	4	4
4	Professional mapping	5	5	4	3	2
5	Static obstacle detection and avoidance	12.5	5	1	3	4
6	Dynamic obstacle detection and avoidance	7.5	5	4	5	4
7	Trap recovery	5	4	1	4	3
8	Dead end	10	4	1	2	4
9	Inter-zone navigation	5	5	5	1	4
10	Path accuracy	15	5	5	5	5
11	Signal loss recovery	10	4	1	4	3
12	App & user interface	10	4	3	5	4
Final score			4.5	2.5	3.7	3.8

Note:

1/ The relevant rating is based on the on-site testing and testing videos

2/ All tested samples are 2-wheel drive robotic lawnmowers. All tested samples operated without boundary wires, instead relying on GNSS positioning enhanced with RTK corrections. Three of the four units also incorporate AI-based camera systems to support navigation and systematic mowing patterns.

BENCHMARK - PERFORMANCE TEST REPORT				
Test item	Scenario	Evaluation dimension	Evaluation Criteria (5-point scale)	Result-verdict

1	Initial setup			
	Where can the docking station be installed? At the edge of the lawn area Away from the lawn area In a covered location, such as a garage, lean-to, or outbuilding	1. Installation location restrictions 2. Additional devices required for installation	Scoring rule: Assess only the tested installation locations. An "additional device" is a separately installed positioning or boundary-defining component; routine fasteners, cables, and the charging dock itself are excluded. If more than one description applies, assign the lowest applicable score. 1: Two or more additional devices are required, and the charging dock is subject to two or more tested-location restrictions. 2: Two or more additional devices are required, or one additional device is required together with two or more tested-location restrictions. 3: One additional device is required, or the charging dock is subject to more than one tested-location restriction. 4: No additional device is required, and the charging dock is subject to no more than one tested-location restriction. 5: No additional device is required, and the charging dock can be installed in all tested locations in accordance with the manufacturer's instructions.	Rating: Kress: 4 A: 3 B: 3 C: 3
2	Auto-mapping			
	Site: Multiple area boundary types to include: Patio edging Pathway edging Hedge / Bushes Tarmac Driveway Low walls Mesh fencing Flower & plant borders	1. Successful completion of mapping 2. Distance between the mower and the physical boundary during mapping 3. Number of manual interventions 4. Accuracy of the generated map relative to the actual site layout	Scoring rule: Record mapping success, number of attempts, number of manual interventions, maximum boundary deviation, and incorrectly mapped or unmapped area. Measure boundary deviation from the physical boundary to the corresponding mapped boundary. If more than one description applies, assign the lowest applicable score. If no Auto-mapping function, assign 0 score. 1: Mapping cannot be completed, or the incorrectly mapped or unmapped area is greater than 5% of the test area. 2: Mapping is completed only after more than one attempt, or more than three manual	Rating: Kress: 4 A: n/a B: 3 C: 3

BENCHMARK - PERFORMANCE TEST REPORT				
Test item	Scenario	Evaluation dimension	Evaluation Criteria (5-point scale)	Result-verdict
			interventions are required, or the incorrectly mapped or unmapped area is greater than 2% and no more than 5%. 3: Mapping is completed on the first attempt; no more than three manual interventions are required; the incorrectly mapped or unmapped area is no more than 2%; and the maximum boundary deviation is greater than 10 cm and no more than 30 cm. 4: Mapping is completed on the first attempt; no more than three manual interventions are required; the incorrectly mapped or unmapped area is no more than 2%; and the maximum boundary deviation is greater than 8 cm and no more than 10 cm. 5: Mapping is completed on the first attempt without manual intervention; the incorrectly mapped or unmapped area is no more than 2%; and the maximum boundary deviation is no more than 8 cm. A system that does not require a map may receive 5 points only if it completes systematic full-area mowing while respecting all tested boundaries without manual intervention.	
3	Manual mapping			
	Remote-control mapping	- Successful completion of mapping - Operating steps and machine response - Mapping time	Scoring rule: Record mapping success, number of attempts, control-response faults, average mapping speed, and whether the saved boundary follows the route driven by the operator. Average mapping speed equals mapped route length divided by active mapping time. If more than one description applies, assign the lowest applicable score. 1: Mapping cannot be completed, or the saved boundary is unusable because it materially departs from the route driven by the operator. 2: Mapping is completed only after more than one attempt, or a control-response fault occurs, or the average mapping speed is no more than 0.5 m/s. 3: Mapping is completed on the first attempt without a control-	Rating: Kress: 4 A: 4 B: 4 C: 4

BENCHMARK - PERFORMANCE TEST REPORT				
Test item	Scenario	Evaluation dimension	Evaluation Criteria (5-point scale)	Result-verdict
			response fault; the saved boundary follows the driven route; and the average mapping speed is greater than 0.5 m/s and no more than 1.0 m/s. 4: The requirements for 3 points are met, and the average mapping speed is greater than 1.0 m/s and no more than 1.5 m/s. 5: The requirements for 3 points are met, and the average mapping speed is greater than 1.5 m/s. A system that does not require manual mapping may receive 5 points only if it completes an equivalent map-dependent setup and full-area mowing task without operator-driven mapping.	
4	Professional Mapping			
	Methods of installation that are not provided to domestic garden owners Separate mapping cart Fleet management	- Does the professional system save time - Operating steps and machine response - Mapping time	Scoring rule: Compare the professional workflow with the standard end-user mapping workflow on the same site. Record available functions, operator steps, mapping time, and map accuracy. "Higher accuracy" and "time saving" may be claimed only when supported by the recorded comparison. If more than one description applies, assign the lowest applicable score. 1: No professional mapping workflow or professional-only mapping function is available. 2: Professional-only mapping functions are available, no improvement in mapping time or accuracy is demonstrated. 3: Professional installers can correct boundaries or edit multiple areas, and the completed map meets the acceptance criteria, but the mower must still be driven around the site as the primary mapping method. 4: The professional workflow provides boundary correction and multi-area mapping, the completed map meets the acceptance criteria, and the recorded mapping time or map accuracy is better than with the standard end-user workflow; the mower remains the primary mapping tool.	Rating: Kress: 5 A: 4 B: 3 C: 2

BENCHMARK - PERFORMANCE TEST REPORT				
Test item	Scenario	Evaluation dimension	Evaluation Criteria (5-point scale)	Result-verdict
			5: A separate device or method completes the map without using the mower as the primary site-survey tool; the completed map meets the same acceptance criteria and the recorded mapping time is lower than with the standard end-user workflow.	
5	Static obstacle detection and avoidance			
	Place the following stationary obstacles, or similar objects, at predefined positions along the boundary or within the mowing area: Small obstacles: golf ball, tennis ball, translucent plastic tube (30 mm in diameter), branch (10–15 mm in diameter), hedgehog model, stone with a projected area of approximately 40 cm², electrical cable (10 mm in diameter), tall grass, apple, and pine cone. Medium-sized obstacles: suspended vegetation positioned 15–18 cm above the ground and below the mower chassis, green large-mesh wire fence, watering can, cat and dog models, basketball, rugby ball, football, parcel, flowerpot, hand shovel, garden fork, spade, and grass trimmer. Large obstacles: inclined wooden board, barbecue grill, adult dummy, large tree or tree trunk, shrub, swing, climbing frame, and child dummy.	- Occurrence of contact or scraping with obstacles - Smoothness of the avoidance path and number of unnecessary maneuvers - Width of the uncut grass remaining around obstacles	Scoring rule: Use one exposure of every listed obstacle in each predefined position. Record avoidance success, contact count, contact severity, unnecessary maneuvers, and the maximum width of uncut grass around each obstacle. “Light contact” means contact without visible damage, displacement, entanglement, or the mower climbing onto the obstacle. If more than one description applies, assign the lowest applicable score. 1: The mower fails to avoid most tested obstacles, or any contact causes damage, entanglement, or the mower to climb onto an obstacle. 2: The mower fails to avoid any large obstacle, or fails to avoid more than half of the medium-sized obstacles, or makes light contact with more than half of all tested obstacles. 3: All large obstacles and at least half of the medium-sized obstacles are avoided; any failures are limited to medium-sized or small obstacles; and the maximum uncut width around an obstacle is greater than 30 cm. 4: All large and medium-sized obstacles are avoided; no damaging contact occurs; there are no more than five light contacts with small obstacles across the complete test; and the maximum uncut width around an obstacle is no more than 30 cm. 5: All obstacles are avoided without damaging contact; there are no more than three light contacts with small obstacles across the complete test; the avoidance path contains no	Rating: Kress: 5 A: 1 B: 3 C: 4

BENCHMARK - PERFORMANCE TEST REPORT				
Test item	Scenario	Evaluation dimension	Evaluation Criteria (5-point scale)	Result-verdict
			unnecessary stop, reversal, or rotation; and the maximum uncut width around an obstacle is no more than 30 cm.	
6	Dynamic obstacle detection and avoidance			
	A person walks across the mower's path at a walking speed during each trial. Test two times.	- Whether the obstacle-clearance distance is sufficient - Whether the avoidance maneuver is appropriate	Scoring rule: Measure the minimum clearance from the mower's outermost surface to the person. Record contact, the mower's response, path deviation, and whether an uncut strip remains after the mower resumes. If more than one description applies, assign the lowest applicable score. 1: Contact occurs and the mower continues to drive against or move with the person without stopping or disengaging the drive. 2: Contact occurs, after which the mower stops, reverses, or disengages the drive. 3: No contact occurs, but the minimum clearance is less than 50 cm, or the avoidance response includes abrupt or unstable movement. 4: No contact occurs and the minimum clearance is at least 50 cm, but the mower makes an unnecessary detour or leaves an uncut strip. 5: No contact occurs and the minimum clearance is at least 50 cm; the mower decelerates to safety or stops, waits until the person has cleared the path, then resumes the planned path without leaving an uncut strip.	Rating: Kress: 5 A: 4 B: 5 C: 4
7	Trap recovery			
	Set up the following scene within the mowing area. Table and chair combination (1 table+5 chairs)	- Occurrence of contact or scraping during recovery - Time required for recovery	Scoring rule: Measure recovery time from the mower's first entry into the table-and-chair arrangement until it has fully exited and resumed normal mowing. "Light contact" means contact without visible damage or displacement. If more than one description applies, assign the lowest applicable score. 1: The mower cannot exit without manual intervention. 2: The mower exits without manual intervention, but recovery time is greater than 150 s, or forceful/repeated	Rating: Kress: 4 A: 1 B: 4 C: 3

BENCHMARK - PERFORMANCE TEST REPORT				
Test item	Scenario	Evaluation dimension	Evaluation Criteria (5-point scale)	Result-verdict
			contact causes visible damage or displacement. 3: The mower exits without manual intervention; recovery time is greater than 60 s and no more than 150 s; only light contact occurs. 4: Recovery time is no more than 60 s; only light contact occurs. 5: Recovery time is no more than 60 s and no contact occurs.	
8	Dead end			
	Set up an I-shaped dead-end passage along the boundary, measuring 0.8 m wide and 4 m long.	- Successful entry into and exit from the dead-end passage - Efficiency and continuity of the mowing path	Scoring rule: Assess the I-shaped dead-end passage specified in the test method. "Independent" means without manual control, physical assistance, or relocation. An "unnecessary maneuver" is an avoidable reversal, in-place rotation, or repeated mowing of the same path segment. If more than one description applies, assign the lowest applicable score. 1: The mower does not enter the dead-end passage independently. 2: The mower enters independently but cannot exit normally. 3: The mower enters and exits independently, but makes two or more unnecessary maneuvers or repeated contacts with the passage boundary. 4: The mower enters and exits independently along a generally direct path, with no more than one unnecessary maneuver and no more than one light contact; no visible damage occurs. 5: The mower enters and exits independently along a direct path without unnecessary maneuvers or contact.	Rating: Kress: 4 A: 1 B: 2 C: 4
9	Inter-zone navigation			
	A S-shaped passage with a gravel surface, measuring 0.8 m wide and approximately 5 m long.	- Successful completion of inter-zone navigation - Smoothness of the transition and number of unnecessary maneuvers	Scoring rule: One "contact" is one distinct contact event with a passage boundary. An "unnecessary manoeuvre" is an avoidable reversal, in-place rotation, or heading correction greater than 45°. Count events during one complete passage. If more than one description	Rating: Kress: 5 A: 5 B: 1 C: 4

BENCHMARK - PERFORMANCE TEST REPORT				
Test item	Scenario	Evaluation dimension	Evaluation Criteria (5-point scale)	Result-verdict
			applies, assign the lowest applicable score. 1: The mower cannot complete the passage without manual intervention, or a contact causes visible damage or immobilization. 2: The mower completes the passage, but makes two or more contacts and three or more unnecessary maneuvers. 3: The mower completes the passage, but makes two or more contacts and no more than two unnecessary maneuvers. 4: The mower completes the passage with no more than one light contact and no more than two unnecessary maneuvers; no visible damage occurs. 5: The mower completes the passage without contact or unnecessary manoeuvres and maintains continuous forward progress.	
10	Path accuracy			
	An obstacle-free lawn area of up to 50 m ² (recommended dimensions: 6 m × 8 m).	- Overall uniformity of cut - Uncut areas (primary focus) - Stripe quality	Scoring rule: Calculate the uncut-area percentage from standardized overhead images of the full test area. Assess cutting-height uniformity and stripe alignment from the same images under consistent lighting. If the three indicators fall into different levels, assign the lowest applicable score. 1: Uncut area is greater than 10%, or cutting height is markedly non-uniform, or the mowing stripes are discontinuous or severely distorted. 2: Uncut area is greater than 5% and no more than 10%, or cutting-height variation is readily visible across multiple parts of the test area, or the stripes show repeated curvature or misalignment. 3: Uncut area is greater than 1% and no more than 5%; only localized cutting-height variation is visible; and the stripes remain continuous with only localized curvature or misalignment. 4: Uncut area is greater than 0% and no more than 1%; cutting height appears uniform across the test area; and the stripes are	Rating: Kress: 5 A: 5 B: 5 C: 5

BENCHMARK - PERFORMANCE TEST REPORT				
Test item	Scenario	Evaluation dimension	Evaluation Criteria (5-point scale)	Result-verdict
			continuous, clear, and generally straight. 5: No uncut area is identified; cutting height appears uniform across the test area; and both the mowing boundary and stripes are continuous, clear, and straight.	
11	Signal loss recovery			
	Use a test lawn of 80–100 m², with approximately half of the area shaded (or under equivalent simulated conditions). Install the charging station in an open, unshaded location. Perform full-area mowing with the mowing direction parallel to the longer side of the shaded section to minimize repeated entry into and exit from the shaded area.	- Number of unplanned stops or shutdowns - Percentage of uncut area - Mowing efficiency - Stripes	Scoring method: Start at 5 points and apply the deductions below. The final score is max(1, 5 – total deductions). Record all unplanned stops or shutdowns from first entry into the shaded or simulated signal-loss area until mowing is completed. Compare completion time with an open-sky baseline run on the same area using the same mower, map, settings, software version, cutting height, and comparable grass and weather conditions. A. Operational continuity - Deduct 2 points if one or more unplanned stops occur during five minutes of continuous operation in the shaded area B. Uncut area - Deduct 2 points if uncut area is greater than 10%. - Deduct 1 point if uncut area is greater than 5% and no more than 10%. - No deduction if uncut area is no more than 5%. C. Mowing efficiency - Deduct 1 point if completion time is more than 20% longer than the open-sky baseline. D. Stripe quality - Deduct 1 point if the stripes are discontinuous, visibly misaligned, or not identifiable in standardized overhead images.	Rating: Kress: 4 A: 1 B: 4 C: 3
12	App & user interface			
	Ease of using the App for mower setup and installation, feature guidance, mapping and map editing, and mower control.	- Interface clarity and intuitiveness - Ease of setup, mapping, editing, and control - Connection stability	Scoring rule: Use the same phone, operating-system version and network conditions, using the current production version of each manufacturer's app and an equivalent test account for all products. Test the defined core	Rating: Kress: 4 A: 3 B: 5 C: 4

BENCHMARK - PERFORMANCE TEST REPORT				
Test item	Scenario	Evaluation dimension	Evaluation Criteria (5-point scale)	Result-verdict
			tasks: initial setup, feature guidance, mapping, map editing, and mower control. Record task completion, retries or assistance, app-to-mower/server disconnections, and input-response time. If more than one description applies, assign the lowest applicable score. 1: One or more core tasks cannot be completed, or a disconnection cannot be recovered without restarting or repeating the task. 2: All core tasks are eventually completed, but repeated retries or tester assistance are required, or two or more recoverable disconnections occur during the complete test, or input response repeatedly exceeds 5 s. 3: All core tasks are completed without tester assistance; no more than one recoverable disconnection occurs; and input response generally does not exceed 5 s, although some steps are unclear or require a retry. 4: All core tasks are completed without assistance or task restart; no disconnection occurs; input response generally does not exceed 3 s; and no more than one minor navigation or labeling issue is observed. 5: All core tasks are completed correctly on the first attempt without assistance; no disconnection occurs; input response generally does not exceed 1 s; and the required controls and guidance are clear and unambiguous throughout the workflow.	

Annex I: Photo of test samples

**Mower
Kress EyePilot® RTKⁿ**



**Mower
A**



**Mower
B**



**Mower
C**



Annex II: Photo of test item

Auto-mapping

Sample A – Auto-mapping is not available

Sample B



Sample C



Sample Kress



Static obstacle detection and avoidance

Sample A



Sample B



Sample C



Sample Kress



Dynamic obstacle detection and avoidance

Sample A



Sample B



Sample C



Sample Kress



Trap recovery

Sample A



Sample B



Sample C



Sample Kress



Dead end

Sample A



Sample B



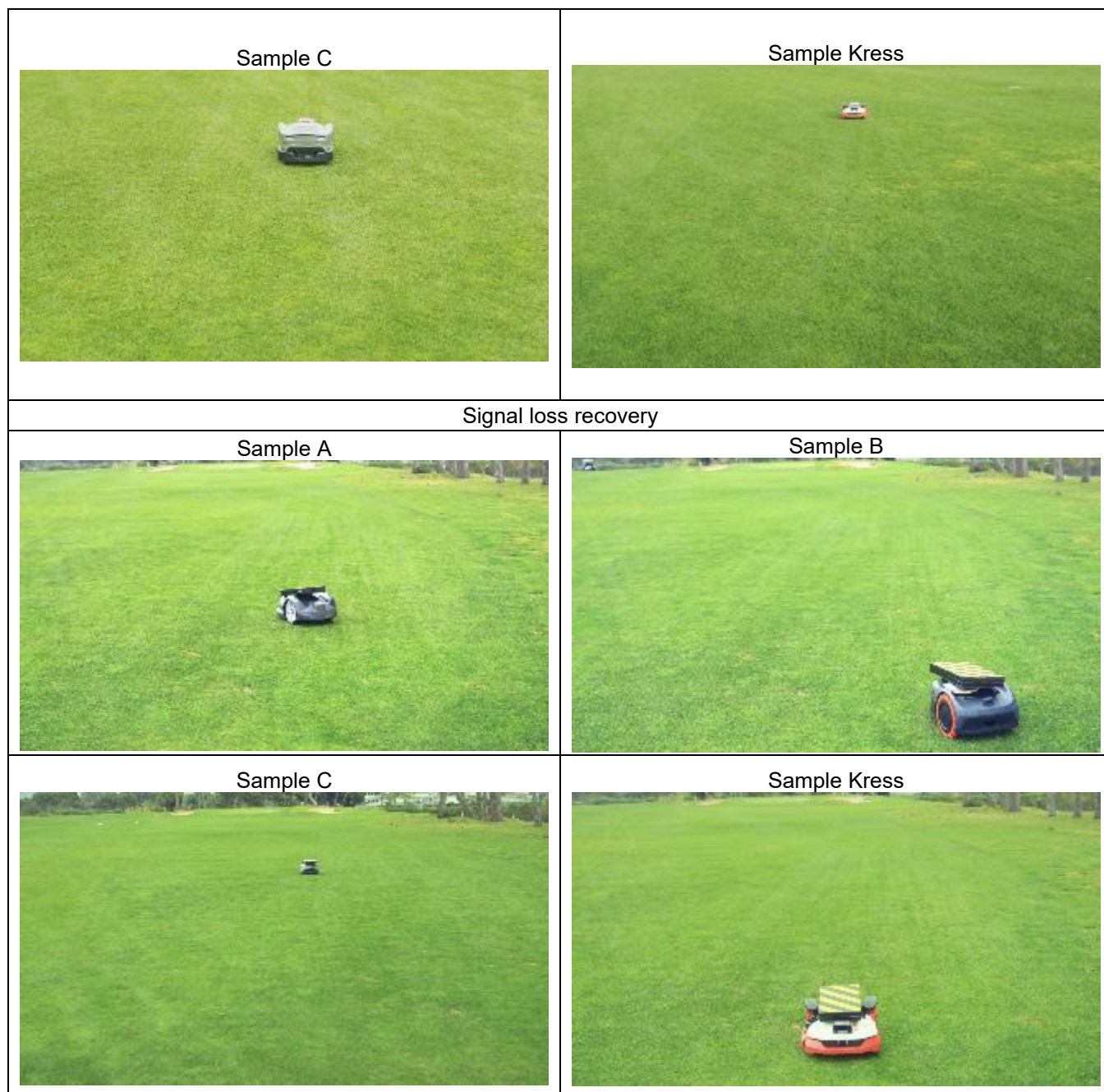
Sample C



Sample Kress



Inter-zone navigation	
Sample A 	Sample B 
Sample C 	Sample Kress 
Path accuracy	
Sample A 	Sample B 



Remark:

This report was revised on 2026-05-20, corrected some grammar errors (such as capitalization, smaller, abbreviation and punctuation marks, and modified descriptions of some testing scenarios and giving more details of some evaluation criteria). This report replaces the original report SHES260200276672 issued on 2026-05-12.

-- End of Test Report --