

Document type: Product capabilities and usability specification
Subject: Zeus2Q humanoid robot
Includes: dual-platform compute, patented upright spring system, grasp/lift ratings, battery + line/AC unlimited runtime, and interactive software features

1. Product Overview

Zeus2Q is a voice-controlled humanoid robot from System Technology Works designed for STEM education, live demonstration, entertainment/animatronics, and human-robot interaction research. It combines servo-based motion, edge AI, speech, vision, and a Python-customizable behavior stack.

ONE-LINE SUMMARY

Zeus2Q stays standing when power is out, can grasp a 12 oz water bottle and lift 3 lb with one hand, runs on Windows or Jetson Orin, and includes line/AC power for unlimited continuous operation.

2. Patented Upright Spring System

Zeus2Q uses a patented spring architecture that keeps the robot standing upright when power is removed and supports standing strength while allowing walking motion.

- Stands upright with power off - safer for classrooms, booths, transport, and power loss
- Supports standing strength without relying only on continuous motor torque
- Enables walking while preserving upright stance support
- Patents include US 12,139,219B1 and US 10,532,464B1

3. Power: Battery + Unlimited Line Power

Zeus2Q ships with both battery operation and line/AC (online) power. Battery supports portable demos; line power supports continuous classroom, booth, and lab use without runtime limits.

Power mode	Capability
Battery	About 5 hours of operation for mobile/demo use
Line / AC power	Included with the robot for unlimited continuous runtime
Chargers	Chargers included; direct supply supported for continuous operation

USABILITY IMPACT

For long classes, exhibitions, and unattended display periods, plug Zeus2Q into line power and run without battery time limits. Use battery when the robot needs to move away from an outlet.

4. Dual-Platform Compute

	Zeus2Q Desktop (Windows)	Zeus2Q Orin (Linux/Ubuntu)
Computer	Windows Mini PC	NVIDIA Jetson Orin
Best for	Classroom coding, VS Code labs	Portable demos, onboard edge AI
Published price*	\$7,950	\$8,350

*Prices as listed on systemtechnologyworks.com. Typical assembly/shipping: 2-4 weeks.

5. Hardware Capabilities

Attribute	Specification
Build	Full aluminum humanoid frame
Size / weight	130 cm H · 37 cm W · 13 kg
Motion	30 joint servos · 3 fingers per hand
Grasp / hold	12 oz water bottle
One-hand lift	Up to 3 lb (1.36 kg)
Stance	Upright without power via patented spring system
Locomotion support	Spring architecture supports standing strength and walking
Vision	Intel RealSense Depth Camera D415 (720p)
Audio	reSpeaker XVF3800 USB Mic Array with Case · dual 3W speakers
Connectivity	Wi-Fi, Bluetooth
Power	Battery (~5 hr) + line/AC power for unlimited continuous runtime
Warranty	1 year with technical support (as published)

6. Software & Interaction Capabilities

Conversational AI

- Spoken-language control with offline speech recognition and TTS
- AIML dialogue plus local LLM reasoning
- Teachable memory, conversation logging, dynamic persona/mode

Perception

- Intel RealSense Depth Camera D415 (720p)
- reSpeaker XVF3800 USB Mic Array with Case
- Face tracking and recognition
- Object detection, image capture, scene description
- Optional emotion / voice-tone features in extended builds

Motion and social interaction

- Wave, handshake, fist bump
- 12 oz bottle grasp/hold; 3 lb one-hand lift
- Rock-Paper-Scissors, dance/rap, comedy, presentation, full demo sequence
- Voice-controlled servo power management and standby poses

7. Voice Command Usability

User says	Zeus2Q does
hello / handshake / bump	Social gestures
bottle	Grasp/hold a 12 oz water bottle demo
play / dance / rap / demo	Games and performances
see / picture / describe / know me	Vision modes
think / search / weather / time	Information and LLM skills
power on/off / stop	Safety and control

8. Usability by Audience

Audience	Why Zeus2Q fits
Educators / students	Python labs, real bottle grasp, dual Windows/Orin path, unlimited line-power class time

Audience	Why Zeus2Q fits
Event / booth teams	Spoken demos, patented power-off stance, line power for all-day exhibits
Researchers / builders	Programmable stack, Orin edge compute, optional ROS-ready Linux path
Entertainment / animatronics	Custom gestures, shows, and production references

9. Competitive Positioning

Most commercial humanoids emphasize walking research platforms. Zeus2Q emphasizes interactive teaching and demos, patented power-off stance, real-object grasp/lift, dual Windows + Orin deployments, and line power for unlimited continuous operation.

10. Capability Matrix

Capability	Windows	Jetson Orin
Voice interaction and demos	Yes	Yes
12 oz bottle grasp / 3 lb lift	Yes (body)	Yes (body)
Patented upright spring stance	Yes (body)	Yes (body)
Battery operation	Yes	Yes
Line/AC unlimited runtime	Yes	Yes
VS Code classroom labs	Primary	Supported
Untethered / onboard edge AI	Limited	Primary

11. What Buyers Get

- Zeus2Q humanoid with patented upright spring architecture
- Windows Mini PC or NVIDIA Jetson Orin compute option
- Battery pack/chargers plus line/AC power for unlimited continuous runtime
- Hands capable of 12 oz bottle grasp/hold and 3 lb one-hand lift
- Spoken-language control and interactive AI behavior stack
- Python curriculum included; 1-year warranty with technical support
- Typical fulfillment: 2 to 4 weeks for assembly and shipping

12. Conclusion

Zeus2Q combines patented power-off upright stance, real-object manipulation, dual Windows/Orin compute, and practical power options: battery for mobility and line/AC power for unlimited continuous operation. That makes it usable for classrooms, all-day demos, and custom humanoid projects.

Zeus2Q is built to be used all day: stand safely, grasp real objects, speak naturally, and run continuously on included line power.

End of Report