HC501 Healthcare Mobile Computer

Designed for a new generation of AI-enabled patient care

The next-generation, premium HC501 is purpose-built to streamline healthcare workflows, allowing caregivers to spend less time on administration and more time on patient care in hospitals, clinics, patient homes and more. The HC501 is engineered for demanding medical environments, with a disinfectant-ready housing, a dedicated emergency duress button to call for help, plus a removable battery and true hot swap to keep devices in service 24x7x365. This next-generation HC5X offers a brilliant, brighter and more durable display, faster and easier scanning with Zebra's latest scan engine, a 50 MP camera for high-resolution clinical documentation, and increased security to protect sensitive data. Under the hood, a revolutionary processor powers advanced healthcare apps—including AI—and you can develop AI apps in days instead of weeks with Zebra's Frontline AI solutions. The HC501—everything healthcare workers need to help improve patient outcomes, safety, and job satisfaction.



Give your healthcare workers a superior user experience

Exceptional processing power for any application—including AI
Put the processing power of a workstation in your workers hands with Qualcomm's new Dragonwing™ Q-6690—delivering more than twice the performance increase.[1] The integrated, dedicated AI engine supports virtually any on-device and in-cloud healthcare app, such as mobile EHR, while reduced power consumption preserves battery power and extends battery cycle times.

Engineered for infection prevention and control
The advanced medical-grade plastics are built to handle frequent disinfection and cleaning to minimize the spread of pathogens.

Improve worker safety—call for help with the press of a button
The easily accessible dedicated red duress button can be configured to call a specific number or launch your emergency application—even if the device is locked.

The latest display technology
Corning® Gorilla® Glass protects the most important user interface component—the display. Liquid droplet rejection and an anti-smudge coating keep the display clean and easy to read. The 33% brighter touchscreen improves readability and works well with light gloves typically worn in the healthcare environment.[1]

Take voice clarity to the next level with advanced AI audio
Clear communication is vital to delivering exceptional patient care. AI noise suppression utilizes advanced neural networks to suppress more background noises, so you can hear every word on every call in busy emergency rooms, hospital hallways, and more.

Unmatched battery features—including true hot swap
True hot swap increases patient safety. Clinicians won't miss a crucial alarm, alert, text message or call during a battery swap—there's no need to power down. The removable full-shift battery enables the 24x7x365 operation hospitals require, so devices stay in the hands of your healthcare workers instead of in a charger. With PowerPrecision battery technology, it's easy to identify and replace unhealthy batteries, protecting productivity.

The HC501—purpose-built for healthcare and the new era of AI-powered patient care.
For more information, please visit www.zebra.com/hc501

All the fastest wireless connections
Get lightning fast, no-drop connections and increased network capacity in your facility with Wi-Fi 7 and Zebra's Wireless Fusion. Enable cellular service anywhere in the world with 5G 3rd Gen Release 17. Support for private 5G and CBRS increases cellular network flexibility.

Rugged and ready for life in healthcare environments
The HC501 is waterproof, drop-proof, and tumble-proof. And with IP65 and IP68 sealing, you can wash the device under running water or submerge it in a sink.

One-tap secure access with a HID® security chip[2]
HID badge[3] tap gives users instant access to the HC501 and allows security to verify credentials for restricted areas—including cleanrooms—without relying on fixed, wall-mounted readers.

Maximum comfort and intuitive design
The thin, light, and perfectly balanced HC501 delivers full shift comfort. Contoured and sculpted surfaces reduce pressure points and provide any size hand with a secure grip.

Keep your devices safe with multiple layers of security
A tamper-resistant Secure Element protects your most sensitive data—from encryption keys to biometric data. FIPS 140-3 delivers government-grade security. And LifeGuard™ for Android™ protects your devices against cyber threats through timely OS updates that can be easily deployed over the air.[4]

Seven key capabilities in one pocketable device

Next-generation advanced scanning—because every scan matters
Zebra's most advanced scan engine is built for all-day scanning and loaded with features that enable faster, effortless scanning to keep healthcare workers focused on what matters most—the patient. Capture virtually any barcode, in any condition—from tiny barcodes on specimen vials to damaged and poorly printed barcodes. No need to stop to scan—workers can keep moving. Lighting is never an issue—capture barcodes in brightly lit pharmacies and labs and dimly lit patient rooms at night. Flexible and programmable scanning feedback can provide audible tones during the day and silent LED and haptic feedback at night to avoid disturbing sleeping patients. And the patient-friendly green LED aimer and white illumination can be used even in the most sensitive areas, such as the NICU.

Capture rich photographic details with a 50 MP camera
Capture highly detailed images with the high-resolution camera to enrich clinical documentation and power AI-driven apps.

Start using Push-to-Talk (PTT) in as little as a day [4]
Instantly connect to co-workers and physicians for real-time collaboration, enabling better decision-making to improve the speed and quality of care—and the patient experience.

Turn the HC501 into a PBX handset [5]
Easily connect nursing staff with families and other care team members with a simple visual user interface that is easy to use.

Deliver faster patient care with media-rich chat [5]
Instantly send text, images, audio and video to one co-worker or an entire care team to enable faster and more informed decisions.

Voice your way—hands-free, wireless or wired
Give workers the convenience of hands-free voice with the WS101-H—Zebra's tiny, wearable Bluetooth Communication Badge for healthcare.[6] Connect a wired headset via the USB-C port or go cord-free with any Bluetooth® wireless headset.

Instantly transform the HC501 into a workstation [7]
The HC501 mobile computer doubles as a workstation to enable efficient charting and other intensive data entry tasks, right at the point of care. Zebra's Workstation Connect cradle and ZEC500 Android Enterprise Computer can instantly connect the HC501 to a large display, keyboard, mouse, and printer—reducing the need to purchase and manage workstations.

Increase workforce efficiency, device security and device value with Zebra-only software

The Zebra DNA™ difference—a comprehensive suite of no-cost tools
Easily set up, secure, and manage your devices right out of the box with Zebra DNA Core+. These pre-loaded and ready-to-use high-value software tools simplify every aspect of the device lifecycle—from deployment and security to day-to-day management.

Upgrade to Zebra DNA Advanced for next-level management and security [8]
Get Zebra's top powerful software-as-a-service solutions in one cost-effective suite to enable secure device access, prevent device loss, protect wireless connection quality, simplify development of apps that take advantage of all HC501 features, and enable easy management of all of your DNA Core+ and DNA Advanced apps in an intuitive cloud-based dashboard.

Specifications

Physical Characteristics	
Dimensions	L x H x D: 6.50 x 3.00 x 0.49 inches (165.0 x 77.95 x 12.5 mm)
Weight	8.64 oz. (245 g) with battery
Display	6.0 inch FHD+; 2160 x 1080; Backlight LED, 600 NITS; optically bonded to touch panel; Corning® Gorilla® Glass
Imager Windows	Corning® Gorilla® Glass
Touch Panel	Multi-mode capacitive TOUCH with bare or light gloved fingertip input; liquid droplet rejection; fingerprint resistant anti-smudge coating
Power	User removable, rechargeable Li-Ion, PowerPrecision for real-time battery metrics; Standard capacity: 3800 mAh (14.63 Watt hours); True Hot Swap battery mode
Expansion Slot	User accessible MicroSD card supports up to 2 TB
SIM	One physical SIM and Dual eSIM
Network connections	WLAN Wi-Fi 7, WPAN (Bluetooth 6.0), WWAN 5G
Notifications	Audible tone; multi-color LEDs; vibration
Keypad	On-screen keypad
Voice and Audio	Stereo speakers; two microphones; audio headset support via USB-C port or Bluetooth wireless headset; BLE Audio 5.3 compatible; VoNR; VoLTE; Cellular Circuit Switch voice; HD voice; VoIP including Full band (FB) and SWB Audio and PTT support Qualcomm® Fluence™ AI Noise Suppression
Buttons	Programmable buttons: Dual scan buttons, Push-to-talk button, volume up/down buttons Safety/Alert: Red Duress Button with emergency dialer feature
Interface Ports	USB Type C (USB 3.1) with sealing plug

Performance Characteristics	
CPU	Qualcomm® Dragonwing™ Q-6690 processor; up to 2.9 GHz
Operating System	Android; for supported Android versions, visit: www.zebra.com/android-versions
Memory	8 GB LPDDR5 RAM/128 GB UFS 3.1 Flash
Security	Android Strongbox with Secure Element IC; FIPS 140-3 Validated (ISO 19790) and Common Criteria certified (ISO 15408); Supports Secure Boot and Verified Boot

User Environment	
Operating Temperature	14°F to +122°F (-10°C to +50°C)
Storage Temperature	-40°F to +158°F (-40°C to +70°C)
Humidity	5% to 95% non-condensing
Sealing	IP68 and IP65 per IEC 60529 standard
Tumble Specifications	750, 1.6 ft. (0.5 m) tumbles
Drop Specifications	Exceeds MIL-STD-810H: 4 ft. (1.22 m) to tile over concrete at +14°F to +122°F (-10°C to +50°C)
Electrostatic Discharge (ESD)	+/- 15 kV air discharge; +/- 8 kV direct discharge; +/- 8 kV indirect discharge

Interactive Sensor Technology (IST)	
Light Sensor	Automatically adjusts display brightness
Motion Sensor	3-axis gyroscope; 3-axis accelerometer
Magnetometer	eCompass automatically detects direction and orientation
Pressure Sensor/ barometer	Designed to measure atmospheric pressure (WWAN SKU only)
Proximity Sensor	Automatically disables the display and touch input when the device is positioned close to the ear

Data Capture	
Scanning	SR500 1D/2D Scan Engine; Green LED aimer, white illumination; leverages Zebra's advanced decoder library for accurate and efficient data capture—complimentary with the device
Rear Camera	50 MP f/1.80: Phase Detection Auto Focus (PDAF), balanced white light Flash LED, Torch mode, HDR
Front Camera	5 MP; fixed focus
NFC	NFC ISO 14443 Type A and B; Mifare, FeliCa and ISO 15693 cards, Mifare Desfire EV1, EV2, EV3, EMVCO RR2 compliant, NFC Forum tags 2,3,4,5; Host Card Emulation, Contactless Payment Support, Google Wallet support, VAS (Value Added Services). Apple ECP1.0 and ECP2.0, Apple VAS and Google Smart Tap certified, FeliCa M-Class Certified, VAS Library/SDK (Apple, Google and Samsung Wallet); HID support[2]

Markets and Applications

Facilities

- Hospitals
- Clinics
- Ambulatory centers
- Outpatient facilities
- Nursing/care homes
- Home healthcare
- Hospice/palliative care
- Medical equipment manufacturers
- Pharmaceutical manufacturers
- Cleanrooms

Applications

- Clinical note-taking
- Electronic Health Records (EHR)
- Medication administration
- Clinical communications
- Positive patient identification
- Phlebotomy/sample tracing
- Mobile alarms and alerts
- Prescription tracking/dispensing
- Blood transfusion administration
- Remote patient monitoring/ telehealth
- Wound care
- Patient discharge automation
- Real-time translation

Wireless PAN	
Bluetooth	Configurable Class 1 and 2; Bluetooth V6.0 with 2X2 Tx; Chipset-enabled secondary BLE beaconing support

Wireless LAN	
Radio	IEEE 802.11 be/az/mc/ax/ac/n/a/g/b/d/h/i/r/k/u/v/w; Tri-band (2.4 GHz, 5 GHz, 6 GHz), 2x2 MU-MIMO; Wi-Fi CERTIFIED 7™; MLO (Simultaneous Transmit and Receive MLMR) connection in Tri-band and Dual-band modes: 2.4+5+5, 2.4+5+6, 5+5+6, 5+6, 5+5, 2.4+5, 2.4+6; Dual Band Simultaneous, High Band Simultaneous; IPv4, IPv6; Wi-Fi Aware
Data Rates	**2.4 GHz:** 802.11b/g/n/ax/be—20 MHz—up to 344 Mbps **5 GHz:** 802.11a/n/ac/ax/be—20 MHz, 40 MHz, 80 MHz, 160 MHz—up to 2882 Mbps **6 GHz:** 802.11ax/be—20 MHz, 40 MHz, 80 MHz, 160 MHz, 320 MHz—up to 5764 Mbps
Fast Roam	802.11r Fast BSS Transition; PMK Caching; Cisco CCKM; OKC
Operating Channels	**Channel 1-13** (2401-2483 MHz): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13; **Channel 36-165** (5150-5850 MHz): 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165; **Channel 1-233** (5925-7125 MHz); **Channel Bandwidth:** 20, 40, 80, 160, 320 MHz Actual operating channels/frequencies and bandwidths depend on regulatory rules and certification agency.
Security and Encryption	WPA3 Enterprise 192-bit mode, GCMP-256—EAP-TLS; WPA3 Enterprise, AES-CCMP-128, GCMP-256—EAP-TTLS (PAP, MSCHAP, MSCHAPv2), EAP-TLS, PEAPv0-MSCHAPv2, PEAPv1-EAP-GTC, EAP-PWD; WPA3 Personal (SAE, SAE-EXT), AES-CCMP-128, GCMP-256 WPA/WPA2 Enterprise, TKIP and AES-CCMP-128; WPA/WPA2 Personal (PSK), TKIP and AES-CCMP-128; Enhanced Open (OWE), AES-CCMP-128, GCMP-256; WEP 40 bit and 104 bit WAN device only: EAP-SIM, EAP-AKA, EAP-AKA Prime

Certifications	Wi-Fi Alliance Certifications: Wi-Fi CERTIFIED 7; Wi-Fi CERTIFIED 6 (Wi-Fi 6E); Wi-Fi CERTIFIED ac; Wi-Fi CERTIFIED n; WPA2-Personal; WPA2-Enterprise; WPA3-Personal; WPA3-Enterprise (includes 192-bit mode); Protected Management Frames; Wi-Fi Enhanced Open; WMM (Wi-Fi Multimedia); WMM-Power Save; WMM-Admission Control; Voice Enterprise; Wi-Fi Direct; Wi-Fi Agile Multiband; Wi-Fi QoS Management; Wi-Fi Optimized Connectivity; Passpoint
Multimedia	Wi-Fi Multimedia™ (WMM) and WMM-PS; TSPEC

Wireless WAN	
GPS/Locationing	GPS, GLONASS, a-GLONASS, Galileo, BeiDou, QZSS, Dual-Band GNSS concurrent L1/G1/E1/B1; (GPS/QZSS, GLO, GAL, BeiDou) + L5/E5a/BDSB2a (GPS/QZSS, GAL, BeiDou), a-GPS; supports XTRA
Radio Frequency Band	Rel-17, Dual SIM/Dual Standby, VoLTE, Gigabit LTE-A, 5G NR Sub-6 (NSA, SA), LTE/NR Carrier Aggregation (CA), LTE CA—Up to 3DLCA, 2ULCA, NR CA: Up to 3DL, 2UL **Bands:** 5G FR1: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29/30/38/40/41/48/66/70/71/75/76/77/78/79 4G: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/34/38/39/40/41/42/43/48/66/70/71/106 3G: B1/2/4/5/6/8/19; 2G: (ROW SKU only) 850/900/1800/1900 **4x4 DL MIMO:** 5G FR1: n1/2/3/7/25/30/38/40/41/48/66/70/77/78/79 4G: 1/2/3/4/7/25/30/38/40/41/42/43/48/66/70 **Private Cellular:** B48/106

Environmental Compliance
RoHS Directive 2011/65/EU; Amendment 2015/863; REACH SVHC 1907/2006; EPEAT Certified; For a complete list of product and materials compliance, please visit: www.zebra.com/environment

Disinfecting and Cleaning
Highly disinfectant ready; Healthcare plastics—supports 30+ independently tested types of wipes and disinfectants. For information on Zebra-approved disinfectants and guidelines on cleaning HC2X/HC5X devices, please download the Cleaning and Disinfecting Fact Sheet at www.zebra.com/healthcare-mobile-computers

Warranty

Subject to the terms of Zebra's hardware warranty statement, the HC501 is warranted against defects in workmanship and materials for a period of 1 (one) year from the date of shipment. For the complete warranty statement, please visit: www.zebra.com/warranty

Recommended Services

Zebra OneCare™ Essential and Select support services; Zebra Visibility Services—VisibilityIQ™ Foresight; For information on Zebra services, please visit www.zebra.com/services

Footnotes

1. Compared to legacy Zebra HC Series healthcare devices
2. HID support—optional in some regions
3. Product does not support HID Proximity cards
4. Requires a Zebra OneCare Maintenance Plan
5. Optional, requires the purchase of Workcloud Sync
6. Optional, requires the purchase of the WS101-H
7. Workstation Connect cradle and the ZEC500 Android Enterprise Computer are optional and available for purchase
8. Optional, requires a subscription

Zebra DNA

For information on Zebra DNA, visit www.zebra.com/zebra-dna. Zebra DNA features vary by model; a support contract may be required. To learn what solutions are supported, visit: https://developer.zebra.com/zebra-dna

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