TC5X Series Mobile Computers

The ultimate in rugged design, performance, productivity and ease of use

The TC5X Series builds on the best-selling TC52 and TC57 rugged handheld mobile computers, with three models that deliver the ultimate in rugged, all-touch mobile computing. The Wi-Fi only TC52x and the Wi-Fi/cellular TC57x add support for the latest mobile innovations, paving the way for new apps that deliver more value and superior future-proofing — such as payment solutions. Support for more Mobility DNA tools makes everything easier — from the user interface to device management, integration and app development. The Wi-Fi only TC52ax adds Wi-Fi 6, a new scanner option with intelligent focusing, double the memory to boost application performance and the new Workstation Connect solution that allows the TC52ax to function simultaneously as a workstation and a mobile computer. And with LifeGuard 3, keeping all TC5X devices and data secure has never been easier.[1] The TC5X Series — the ultimate rugged mobile computers, redefined.



A user experience in a class of its own

Powerful advanced scanning for the fastest, easiest data capture

Available in all models, the SE4720 delivers point-and-shoot simplicity with a large 'sweet spot' of up to 24 in./60 cm away, and easy capture of large barcodes at close range. Available in the TC52ax, the SE55 Advanced Range Scan Engine with IntelliFocus™ technology intelligently adjusts to quickly capture barcodes in hand or over 40 ft./12 m^2 away — ideal for dark stores and front-of-store micro-fulfillment centers.

The best-in-class green laser aimer is designed for the extended scanning range. It's up to seven times more visible than a red laser. And instead of the typical aiming dot, the aiming pattern spreads out over several feet. The result? Easy and accurate point-and-shoot aiming throughout the entire scan range — even in bright sunlight. And no matter which engine you choose, with Zebra's PRZM Intelligent Imaging Technology, you get the performance that has made Zebra the worldwide leader in barcode scanning — dependably fast first-time every-time barcode capture.

Maximize productivity with enterprise accessories

Backwards compatibility with all TC52/TC57 accessories allows you to cost-effectively upgrade to the latest technology. Support is built in for the new generation of payment solutions. And Zebra's HD4000 head-mounted display enables new cutting edge hands-free directed-action workflows.

Easily find misplaced devices

An integrated Bluetooth beacon and support for Device Tracker allows users to quickly and easily locate misplaced or missing devices. And with support for the latest version of Device Tracker, the TC52ax can be located — even if the device is turned off or the battery is dead.

Full shift power your workers can count on

The PowerPrecision+ high capacity battery delivers up to an impressive 14 hours of power[3] — plenty for the longest shift. With a two-minute Warm Swap mode, swapping batteries is fast and easy — there's no need to turn off the device or close active apps. And with fast charging, batteries are fully charged and ready to go in record time.

The rugged TC5X Series — packed with innovative new features that take performance, productivity and ease of use to the next level.

For more information, visit www.zebra.com/tc5xseries

Maximum application performance

Instantly navigate through application screens, thanks to the faster 2.45 GHz processor and new Universal Flash Storage (UFS).

Advanced higher-resolution touchscreen technology with Full HD

Full HD utilizes the entire 5-inch display, providing more room to view more information. The easy, familiar and flexible multi-touch operation works even when wet, with a gloved finger or a stylus. And the best-in-class outdoor readability screen is easy to read, even in bright sunlight.

Get double functionality — turn your TC52ax into a mobile-powered workstation

When workers need a larger display to best view information and interact with applications, the TC52ax with Workstation Connect delivers. This powerful complimentary software solution enables the display of TC52ax apps on a large monitor, complete with a mouse, keyboard and any other peripheral required to make app interaction easy. Workers get a true workstation experience — the application's user interface takes advantage of the additional screen real estate and users can resize windows — and open multiple apps in multiple windows. And workers can switch between mobile computer and mobile-powered workstation on the fly to meet the app needs of the moment. The result? More ways to use your TC52ax, boosting device value and return on investment, while simplifying and reducing the cost of your technology infrastructure.

All the latest technology advancements

Rugged and ready for the toughest business day

The TC5X Series mobile computers may look like smartphones, but they are engineered for the enterprise. Drop it in water or on concrete, use it in the rain, snow or dusty areas. Sealing now includes the battery, increasing reliability. The unibody design provides extra impact protection for the sensitive electronics. And Corning® Gorilla® Glass provides maximum scratch-resistance and shatter-proofing for the touch panel and scanner window.

More Wi-Fi range and speed — with less power

2x2 Multiple-User Multiple Input Multiple Output (MU-MIMO) technology allows access points to communicate with multiple devices simultaneously via pinpoint beamforming, boosting Wi-Fi network capacity, speed and range. Processing is shifted from the mobile device to the access point, extending battery cycle time.

And if you need the latest in Wi-Fi technology, the future-ready TC52ax supports Wi-Fi 6, providing your workers with unmatched wireless performance.

The highest quality voice in its class

Three microphones, high-volume speakers and noise-cancellation technology work together to ensure that callers on both ends of every call can hear every word — even in the noisiest areas. And inside your facility, Zebra's Fusion software ensures voice clarity everywhere — on the warehouse or sales floor, in a stairwell or in the parking lot.

Complete cellular network flexibility with single device simplicity

The TC57x provides workers anywhere in the world with dependable cellular service. And certification on leading public safety networks provides first responders with the dependable service they require.

Ultra high-resolution photos and videos

The 13 MP color rear camera captures detailed photos and videos for proof-of-condition/delivery/service, onsite support and more. And with more advanced software, color is accurate, images are sharper and crisper, a dynamic lighting range enables superior image capture in low light — and new on screen icons make the user interface more intuitive.

5 MP front-facing camera supports more advanced apps

Video calling improves service and productivity. Customers enjoy a more personal touch, while remote experts can assist with repair to help onsite technicians resolve issues faster and increase first-time-fix rates.

Bluetooth 5.x — 2x speed, 4x the range, all with less power

Improved data speeds up to 2 Mbps increase application flexibility and performance for Bluetooth peripherals, such as printers and headsets, while Bluetooth Low Energy (BLE) reduces power requirements to extend battery cycle times.

Drive workforce productivity and device control to a new level with the powerful Mobility DNATM suite

So many tools, so much value

LifeGuard™ for Android™ provides security patches that keep your device secure, every day your devices are in service — and devices can be updated automatically. Mobility Extensions (Mx) provides over a hundred features you can activate to improve the security, data capture support, wireless connectivity and device manageability of the standard Android operating system. Stage a handful or thousands of devices quickly and easily with StageNow — including deactivation of Google Mobile Services (GMS). Control the apps and device features your workers see with Enterprise Home Screen. Capture and send data right to your application with DataWedge — no coding required. WorryFree Wi-Fi provides dependably superior Wi-Fi. PowerPrecision Console and the PowerPrecision+ battery enable unsurpassed battery management. Add push to talk over Wi-Fi or cellular with PTT Pro. Turn TC5X Series devices into mobile PBX handsets with PTT Voice. And more.

Specifications

Physical Characteristics

Dimensions	TC52x/TC52ax/TC57x with SE4720: 6.10 in. L x 2.9 in. W x 0.73 in. H 155 mm L x 75.5 mm W x 18.6 mm H TC52ax with SE55: 6.26 in. L x 2.9 in. W x 0.73 in. H 159 mm L x 75.5 mm W x 18.6 mm H
Weight (with battery)	TC52x/TC57x: 8.8 oz./249 g TC52ax: (SE4720) 9.2 oz. /260 g TC52ax: (SE55) 9.4 oz./266 g
Display	5.0 in. Full High Definition (1920 x 1080); LED backlight, optically bonded to touch panel
Imager Window	Corning® Gorilla® Glass
Touchpanel	Dual mode capacitive touch with stylus, bare or gloved fingertip input (stylus sold separately); Corning Gorilla Glass; water droplet rejection; fingerprint resistant anti-smudge coating
Power	Rechargeable Li-Ion, PowerPrecision+; > 15.48 Watt hours; > 4150 mAh, improved battery metrics for better battery management; fast charging (up to 2.4 A); Warm Swap battery mode up to two minutes (120 seconds); BLE battery optional
Expansion Slot	Accessible MicroSD supports up to 256 GB SDXC
SIM	TC57x only: 1 nano SIM; 1 eSIM
Network Connections	TC52x/TC52ax/TC57x: WLAN, WPAN (Bluetooth), USB 2.0, High Speed (Host and Client) TC57x only: WWAN
Notifications	Audible tone; multi-color LEDs; haptic feedback
Keypad	On-screen keypad and enterprise keyboard
Voice and Audio	Three microphones with noise cancellation; vibrate alert; front facing speaker; Bluetooth wireless headset support; high quality speaker phone; PTT headset support; cellular circuit switch voice; HD voice; Super-wideband (SWB) and Fullband (FB) audio; 3.5mm audio jack
Buttons	Four programmable buttons: dual dedicated scan buttons, dedicated push-to-talk button and volume up/down buttons

Performance Characteristics

CPU	TC52x/TC57x/TC52ax: Qualcomm Snapdragon™ 660 octa-core, 2.45 GHz
Operating System	TC52x: Upgradeable to Android 14 TC57x: Upgradeable to Android 14 TC52ax: Upgradeable to Android 14
Memory	TC52x/TC57x: 4GB RAM/32GB UFS Flash TC52ax: 4GB RAM/64GB UFS Flash
Security	FIPS 140-2 Validated (ISO 19790) and Common Criteria certified (ISO 15408); FIPS 140-2 cryptography can be enabled on select configurations through a custom SKU request; Supports Secure Boot and Verified Boot.

Wireless WAN, Data and VoiceCommunications (TC57x Only)

Radio Frequency Band	Supports VoLTEs, Carrier Aggregation up to 3DL AT&T FirstNet Ready certification Verizon PNTM certification LTE FDD: 700/800/850/900/1800/1900/AWS/2100/2600 (28,13,14,12,17/19,20/5,26/8/3/2,25/4,66/1/7); LTE TDD: 1900/2300/2500 (39/40/41,38); UMTS/HSPA/HSPA+: 850/900/AWS/1900/2100 (5/8/4/2/1); GSM/GPRS/EDGE: 850/900/1800/1900
GPS	TC57x only: Autonomous, Concurrent GPS; GLONASS; Gallileo; BeiDou and A-GPS; supports IZAT™ XTRA
Multimedia	Wi-Fi Multimedia™ (WMM) and WMM-PS; TSPEC

Wireless LAN

Radio	IEEE 802.11 a/b/g/n/ac/d/h/i/r/k/v/w/mc/ax[4]; 2x2 MU-MIMO; Wi-Fi™ certified; Dual Band Simultaneous; IPv4, IPv6
Data Rates	5GHz: 802.11a/n/ac/ax[4] — 20MHz, 40MHz, 80MHz - up to 1201 Mbps; 2.4GHz: 802.11b/g/n/ax[4] — 20MHz up to 286.8 Mbps
Operating Channels	Channel 1-13 (2412-2472 MHz): 1,2,3,4,5,6,7,8,9,10,11,12,13 Channel 36-165 (5180-5825 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 Bandwidth: 20, 40, 80 MHz Actual operating channels/ frequencies and bandwidths depend on regulatory rules and certification agency.
Security and Encryption	WEP (40 or 104 bit); WPA/WPA2 Personal (TKIP, and AES); WPA3 Personal (SAE); WPA/WPA2 Enterprise (TKIP and AES); WPA3 Enterprise (AES) — EAP-TTLS (PAP, MSCHAP, MSCHAPv2); EAP-TLS, PEAPv0-MSCHAPv2, PEAPv1-EAP-GTC, LEAP and EAP-PWD; WPA3 Enterprise 192-bit mode (GCMP-256) — EAP-TLS; Enhanced Open (OWE)
Certifications	Wi-Fi Alliance Certifications: Wi-Fi CERTIFIED n; Wi-Fi CERTIFIED ac; Wi-Fi CERTIFIED 6 (TC52ax only); Wi-Fi Enhanced Open; WPA2-Personal; WPA2-Enterprise; WPA3-Personal; WPA3-Enterprise (includes 192-bit mode); Protected Management Frames; Wi-Fi Agile Multiband; WMM; WMM-Power Save; WMM-Admission Control; Voice-Enterprise; Wi-Fi Direct
Fast Roam	PMKID caching; Cisco CCKM; 802.11r (OTA); OKC

Wireless PAN

Bluetooth	Class 2, Bluetooth v5.0 (TC52x/TC57x) and Bluetooth v5.1 (TC52ax); Bluetooth Low Energy

Markets and Applications:

Retail Associates

- Price/inventory checks
- Item locator
- Line busting/POS
- Assisted selling

Retail Managers

- Workforce mgmt
- Planogram mgmt
- Promotion compliance
- Merchandising

Direct Store Delivery Drivers

- Order automation
- Delivery tracking
- Inventory mgmt
- Customer support

Field Service Technicians

- Asset mgmt
- Parts inventory
- Invoicing
- Scheduling

Parcel/Light Courier Drivers

- Proof of delivery
- Asset mgmt
- Location services

Government/Public Safety

- eCitation
- Ticketing
- Situational awareness
- Communication and collaboration

General Certifications

TAA compliant; ARCore Google certification sustained; Android Enterprise Recommended

User Environment

Operating Temp.	-4°F to 122°F/-20°C to 50°C
Storage Temp.	-40°F to 158°F/-40°C to 70°C
Humidity	5% to 95% non-condensing
Drop Specifications	Multiple 6 ft./1.8 m drops to concrete with the rugged boot accessory per Mil STD 810 G; multiple 4 ft./1.2 m drops to tile over concrete -10°C to 50°C/14°F to 122°F
Tumble Specification	500 1.6 ft./0.5 m tumbles, meets or exceeds IEC tumble specification
Sealing	IP68 and IP65 with battery per applicable IEC sealing specifications
Electrostatic Discharge (ESD)	+/- 15 kV air discharge; +/- 8 kV direct discharge; +/- 8 kV indirect discharge

Interactive Sensor Technology (IST)

Light Sensor	Automatically adjusts display backlight brightness
Magnetometer	eCompass automatically detects direction and orientation
Motion Sensor	3-axis Accelerometer with MEMS Gyro
Pressure Sensor	Automatically detects altitude information for locating (TC57x only)
Proximity Sensor	Automatically detects when the user places the handset against head during a phone call to disable display output and touch input

Data Capture

Scanning	All models: SE4720 1D/2D Scan Engine TC52ax only: SE55 Advanced Range 1D/2D Scan Engine with IntelliFocus
Camera	All models: Front — 5 MP; TC52x/TC57x Rear — 13 MP autofocus; flash LED generates balanced white light; supports Torch mode; TC52ax Rear — 13 MP Phase Detection Autofocus (PDAF); flash LED generates balanced white light; Torch mode
NFC	ISO 14443 Type A and B; FeliCa and ISO 15693 cards; P2P mode (up to A10 only) and Card Emulation via Host; Card Emulation via UICC (WWAN terminals only)

Environmental Compliance

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

Warranty

Subject to the terms of Zebra's hardware warranty statement, the TC52x/TC52ax/57x Series is warranted against defects in workmanship and materials for a period of 1 (one) year from the date of shipment. For complete warranty statement, please visit: www.zebra.com/warranty

Recommended Services

Zebra OneCare™ Essential and Select support services; Zebra Visibility Services — VisibilityIQ™ Foresight

Footnotes

1. Requires Android 11.
2. Distance dependent on symbology type and size.
3. Based on typical user profiles.
4. 802.11ax is only offered in the TC52ax.

Specifications subject to change without notice.
For details related to Common Criteria support, please visit: www.zebra.com/commoncriteria

Mobility DNA

Mobility DNA adds functionality and simplifies mobile device deployment and management. For more information, visit www.zebra.com/mobilitydna

For supported solutions, visit https://developer.zebra.com/mobilitydna

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