

TC78^{ex}-NI Touch Computer

for Zone 2/Div. 2 hazardous areas



Introducing the TC78^{ex}-NI, a new generation of touch computer designed for a new generation of mobile solutions.

Streaming video, video calls, intuitive multimedia-rich apps, augmented reality apps that enable new, more effective workflows — the rugged, thinner and lighter TC78^{ex}-NI supports them all.

More processing power for simultaneous app support. A 6-inch advanced display. Comprehensive wireless network support for unmatched performance and reliability — Wi-Fi 6E, 5G and CBRS (for North America). Bluetooth 5.2 for superior accessory performance. Crystal clear voice on audio and video calls. The next level in scanning performance with the SE55 Advanced Range scan engine.

The powerful free Mobility DNA tools are pre-installed and ready to use, making it easier to stage, secure and troubleshoot devices, capture and send data to your applications right out of the box, and more.

The TC78^{ex}-NI is approved for ATEX/IECEx/UKEX Zone 2/22 and NEC Class I, II, III Div.2. Further local certifications are possible on customer request.

- Certified for Zone 2 and Div. 2 hazardous areas
- Ultra-rugged yet lighter and thinner than previous generations
- Faster, future-ready wireless connections with WiFi 6E and 5G
- 6-inch Full HD+ display
- Advanced Range scanning (up to 12m)
- More value with Mobility DNA software

Explosion protection

Marking ATEX	<ul style="list-style-type: none"> ⊕ II 3G Ex ic op is IIC T4 Gc ⊕ II 3D Ex ic op is IIIC T135°C Dc IP64
Certification	EPS 23 ATEX 1 053 X
Marking IECEx	<ul style="list-style-type: none"> Ex ic op is IIC T4 Gc Ex ic op is IIIC T135°C Dc IP64
Certification	IECEX EPS 23.0008X
Marking UKEX	<ul style="list-style-type: none"> ⊕ II 3G Ex ic op is IIC T4 Gc ⊕ II 3D Ex ic op is IIIC T135°C Dc IP64
Certification	EPS 23 UKEX 1 053 X
Marking NEC/CEC 500	<ul style="list-style-type: none"> Class I Div. 2 Groups A, B, C and D Class II Div. 2 Groups F, G Class III; T4
Certification	<i>pending</i>

Other approvals and certificates, see www.bartec.com

User environment

Operating temperature	-20 °C to +50 °C (-4 °F to 122 °F)
Storage temperature (without battery)	-40 °C to +70 °C (-40 °F to 158 °F)
Relative humidity	5% ~ 95% (non-condensing)
Protection class (IEC 60529)	IP 68
Drop Specification	Multiple 3.05 m (120 inch) drop to concrete at room temperature per MIL-STD 810H, multiple 2.4 m (94,5 inch) drop to concrete over operating temperature -20° C to 50°C per MIL-STD 810H
Tumble Specification	2.000 tumbles from a height of 1.0 m (39.4 inch), meets and exceeds IEC tumble specification

Technical data

Processor	Qualcomm 6490 Octa-Core, 2.7 GHz
Memory (RAM)	4 GB RAM
Mass storage	64 GB UFS Flash
Storage expansion	User accessible MicroSD - up to 2 TB
SIM	1 Nano SIM and 1 eSIM
Operating system	<p>Android 13™ delivered as GMS (Google Mobility Services) version, Hardware supports future Android™ versions (up to Android™ 16)</p> <p>Configuration Zebra's "Restricted Mode" can be set via StageNow, for control over Google Mobile Services (GMS) and other services</p>
Size (W x L x H)	176.8 x 85.8 x 28.4 mm (6.96 x 3.38 x 1.12 inch)
Weight (with battery)	349 g (0.77 lb)
Display	6", bonded
Resolution	2160 x 1080 pixels
Front glass	Corning Gorilla glass
Touch function	Multi mode capacitive touch

Usability	With Stylus or bare or gloved fingertip input
Battery	<p>Lithium polymer battery 3.85 V/4680 mAh fast charging, warm Swap battery mode.</p> <p>Must only be changed and charged outside hazardous areas!</p> <p>Other battery options available upon request.</p>
Notifications	Audible tone, multi-color LEDs, haptic feedback
Voice & Audio	Three microphones with noise cancellation; vibrate alert; dual speakers for loudness; Bluetooth wireless headset support; high quality speaker phone; cellular circuit switch voice; HD Voice, including Superwideband (SWB); Wideband (WB) and Fullband (FB)
Buttons	Programmable buttons for maximum flexibility: dual dedicated scan buttons, dedicated push-to-talk button, volume up/down buttons
External I/O	<ul style="list-style-type: none"> - USB 2.0 (back I/O) - host only - USB 3.0 (bottom, type C, Super Speed) - host and client
Sensors	<ul style="list-style-type: none"> - Light Sensor - adjusts display backlight brightness - Magnetometer - detects direction and orientation - Motion Sensor - 3-axis accelerometer with MEMS Gyro - Pressure Sensor - detects altitude information for locating - Proximity Sensor - detects when the user places the handset against head during a phone call to disable display output and touch input - Gyro - senses linear orientation
Barcode capture	SE55: 1D/2D Advanced Range Scan Engine with IntelliFocus™ technology; reading range up to 12,2 m (480.3 inch) depending on type, size and quality of the barcode Supported symbologies/barcodes: see table.
NFC	ISO 14443 Type A and B; FeliCa and ISO 15693 cards; card emulation via host; contactless payment support; ECP1.0 and ECP2.0 polling support; Apple VAS certified; NFC Forum certified
Camera	<ul style="list-style-type: none"> - Backside: 16 MP with autofocus - Frontside: 8 MP fixed focus - flash LED generates balanced white light - supports Torch mode + HDR
Radio Frequency Band	<p>North America:</p> <ul style="list-style-type: none"> - 5G FR1 (n2, 5, 7, 12, 13, 14, 25, 26, 29, 38, 41, 48, 66, 71, 77, 78) - 4G (B2, 4, 5, 7, 12, 13, 14, 17, 25, 26, 29, 38, 41, 48, 66, 71) - 3G (B2, 4, 5) - 2G (850, 1900) - CBRS supports private networking (LTE/5G) <p>Rest of World:</p> <ul style="list-style-type: none"> - 5G FR1 (n1, 2, 3, 5, 7, 8, 20, 28, 38, 40, 41, 66, 71, 77, 78) - 4G (B1, 2, 3, 4, 5, 7, 8, 17, 20, 28, 38, 39, 40, 41, 42, 43, 66, 71) - 3G (1, 2, 3, 4, 5, 8) - 2G (850, 900, 1800, 1900)

GPS	<ul style="list-style-type: none"> – GPS – 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
Bluetooth	Class 2, Bluetooth v5.2 a
Software	No functional changes were made to the device due to the explosion protection. All tools and applications available from Zebra for the TC78 are compatible with the TC78 ^{ex} -NI version. e.g. messaging via Workforce Connect PTT Express or the Mobility DNA solutions from ZEBRA
Mobility DNA	Mobility DNA solutions help you get more value out of our mobile computers by adding functionality as well as simplifying deployment and management of our mobile devices. For more information on these Zebra-only features, please visit www.zebra.com/mobilitydna
PTT (Push-to-Talk) App	Powered by Zebra Technologies, BARTEC brings the enterprise-class push-to-talk application PTT Pro into hazardous areas. PTT Pro connects your workforce with enterprise-class instant PTT and secure messaging services. It supports direct messaging, image, audio, and video - regardless of whether your users are carrying a BARTEC mobile device in hazardous areas, or their own Android or Windows device in non-hazardous areas. For more information see bartec.com
Warranty	1 year
Service contracts	COMFORT and ALL-IN
Scope of delivery	<ul style="list-style-type: none"> – Touch Computer TC78^{ex}-NI – Battery – Quick Start Guide
Also required	(not included in the delivery) <ul style="list-style-type: none"> – Charging accessories (see all available options in the datasheet: TC78^{ex}-NI Accessories)

WLAN-WiFi

	<ul style="list-style-type: none"> – IEEE 802.11 a/b/g/n/ac/d/h/i/r/k/v/w/mc/ax – 2x2 MUMIMO – Wi-Fi 6E (802.11ax) – Wi-Fi™ certified – Wi-Fi™ 6E certified – Dual Band Simultaneous – IPv4, IPv6
Data Rates	<p>5 GHz: 802.11a/n/ac/ax - 20 MHz, 40 MHz, 80 MHz, 160 MHz - up to 2402 Mbps</p> <p>2.4 GHz: 802.11b/g/n/ax - 20 MHz up to 286.8 Mbps</p> <p>6 GHz: 802.11ax - 20 MHz, 40 MHz, 80 MHz, 160 MHz - up to 2402 Mbps</p>
Operating Channels	<p>Channel 1-13 (2401-2483 MHz): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13</p> <p>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</p> <p>Channel 1-233 (5925-7125 MHz)</p> <p>Channel Bandwidth: 20/40/80/160 MHz</p> <p>Actual operating channels/frequencies and bandwidths depend on regulatory rules and certification agency.</p>
Security and Encryption	<p>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, EAP-PWD</p> <p>TC78 WWAN models only: EAP-SIM, EAPAKA; WPA3 Enterprise 192-bit mode (GCMP256) - EAPTLS; Enhanced Open (OWE)</p>
Certifications	<p>Wi-Fi Alliance Certifications: Wi-Fi CERTIFIED n, Wi-Fi CERTIFIED ac, Wi-Fi CERTIFIED 6, Wi-Fi Enhanced Open, WPA2-Personal, WPA2-Enterprise, WPA3-Personal, WPA3-Enterprise (includes 192-bit mode), Protected Management Frames, Wi-Fi Agile Multiband, WMMk WMM-Power Save, WMMAdmission Control, Voice-Enterprise, Wi-Fi Direct, QoS Management, OCE</p>
Fast Roam	PMKID caching, Cisco CCKM, 802.11r, OKC

Accessories

See datasheet: TC78^{ex}-NI Accessories
It is absolutely necessary to use original accessories from BARTEC !

Ordering information

TC78^{ex}-NI - North America – with 4G/LTE for North America (US, Canada and Puerto Rico) – marking NEC Class I, II, III Div 2 Supports only radio frequencies (channels/ bandwidths) depending on regulatory rules of North America.	B7-A2D2-2A11121110NA
TC78^{ex}-NI - Rest of the world – with 4G/LTE for the rest of the world (with exception of US, Canada, Puerto Rico and China) – marking ATEX/IECEX /UKEX Zone 2/22 – additional regulatory requirements may apply for countries outside the EU	B7-A2D3-2B11121110A6

Supported Symbologies/Barcodes

1D/Linear Symbol/Codes	Code 11 Code 39 Code 93 Code 128 Codabar Coupon Code Chinese 2 of 5	Discrete 2 of 5 EAN-8 EAN-13 Interleaved 2 of 5 MSI UPCA UPCE	UPC/EAN supplementals Trioptic 39 RSS-14 RSS Expanded RSS Limited Webcode
2D Stacked and 2D Matrix Symbol/Codes	Aztec Australian 4-state Canadian 4-state Composite AB Composite C PDF-417 Data Matrix	Dutch Kix Japanese 4-state Macro PDF-417 (Macro) Micro PDF-417 Micro PDF-417 microQR Maxi Code	QR Code TLC39 UK 4-state US Planet US Postnet USPS 4-state (US4CB)

Typical reading range SE55

The quality of the barcode and environmental conditions may affect performance.

Symbologies/Barcodes	Near Distance (cm/[in])	Far Distance (cm/[in])
Code 39 3 mil	6.9 [2.7]	41.1 [16.2]
Code 39 5 mil	6.4 [2.5]	67.6 [26.6]
Code 39 20 mil	-	276.9 [109]
Code 39 55 mil	-	744.2 [293]
Code 39 100 mil	-	1407.2 [554]
Code 128 15 mil	18.2 [7.2]	182.9 [72]
PDF417 5 mil	7.1 [2.8]	49.8 [19.6]
PDF417 6.7 mil	6.6 [2.6]	65 [25.6]
DataMatrix 10 mil	5.6 [2.2]	68.8 [27.1]
DataMatrix 100 mil	-	685.8 [270]
100 % UPC (13 mil)	6.4 [2.5]	180 [71]