

MC51S

Mobile Computer

Advanced Configuration, Superior Performance,
Stable Wireless, Efficient Experience



Chainway MC51S is a next-generation 4G mobile computer built for frontline efficiency. It combines strong performance, fast connectivity, and flexible data capture in one device. With a high-performance processor and 6-inch HD display (optional FHD), it supports 4G, Wi-Fi 5 (optional Wi-Fi 6), and Bluetooth 5.0 for stable connectivity even in demanding environments. The device supports an optional UHF handle with a self-developed Impinj-based module and full Gen2X protocol support. It also offers barcode scanning and NFC, ideal for retail, warehousing, utilities, and asset management.



Flagship Performance With Long-term Support

The MC51S is powered by the Qualcomm 4G IoT long-lifecycle platform, featuring a 2.8GHz processor for enhanced performance. Running Android 16 and certified by Google AER, it delivers enterprise-grade security, compatibility, and stability, with long-term OS maintenance and updates. The device comes standard with 4GB RAM + 64GB ROM and offers an optional 8GB + 256GB configuration to accommodate different performance and storage requirements.

6" HD Display, Durable & Multi-Touch

The MC51S comes with a 6" HD display (1440 × 720) and an optional FHD (2160 × 1080) version for clearer, sharper visuals. Built with Corning Gorilla Glass 3, it offers strong scratch and impact resistance. The screen supports multi-touch, wet-hand use, and glove operation, making it ideal for industrial and outdoor applications.

Stable Wireless Connectivity Experience

The MC51S features advanced 4G, Wi-Fi 5 (optional Wi-Fi 6), and Bluetooth 5.0 technologies, delivering fast, stable, and intelligent wireless connectivity. It ensures higher transmission speed and lower latency while maintaining reliable connections in dense or high-interference environments, effectively preventing disconnections and lag. The device also supports fast, seamless Wi-Fi roaming, ensuring uninterrupted and efficient communication even during cross-zone mobile operations.

Large Battery, Fast Charge, Hot-Swap, Nonstop Work

The MC51S is equipped with a **5,000mAh removable battery** with **QC3.0 fast charging**. A backup cell enables **hot-swap**, ensuring uninterrupted operation. The integrated battery and cover design with slide latch allows quick, easy replacement. **A built-in fuel gauge** supports smart battery management, letting users monitor power and health status, plan charging or replacement, and extend battery life for reliable multi-shift performance.

Rugged Design For Harsh Environments

The MC51S is engineered for industrial durability, ensuring reliable operation in harsh environments. It passes **MIL-STD-810H** drop tests from **1.5m**, protecting against everyday impacts. With an **IP67 rating** for dust and water resistance, the device ensures reliable performance in outdoor inspections, warehousing, and industrial operations.

Versatile Data Capture for Diverse Industries

The MC51S comes equipped with a **16MP rear camera** with flash and a 5MP front camera, enabling precise capture of high-resolution images and clear documentation of on-site details. The built-in **enterprise-grade scanning engine** easily reads a wide range of 1D and 2D barcodes, including damaged and DPM codes, ensuring both speed and accuracy. **NFC** is provided as standard for short-range wireless applications, enhancing operational convenience. For industry-specific needs, the MC51S offers **UHF RFID** options that support bulk data capture, enabling more efficient data collection workflows.

Specification		
Physical Characteristics	Dimensions	161.0 × 77.8 × 15.5mm / 6.34 × 3.06 × 0.61in.
	Weight	297g / 10.48oz. (device with battery)
	Display	6" display, 1440 × 720; optional 2160 × 1080 FHD version
	Touch Panel	Corning Gorilla Glass, multi-touch panel, gloves and wet hands supported
	Battery	5000mAh removable main battery, support QC3.0 and RTC; Support Battery Management System; Hot-swap
	Card slot	1 for SIM card, 1 for SIM or TF card; Supports eSIM (optional)
	Interfaces	USB 3.0 Type-C with OTG and water-drop detection; Bottom contacts: 2-pin for charging; Rear contacts: 2-pin for handle button extension; 12-pin for optional expansion (optional)
	Sensor	G-sensor, light sensor, proximity sensor, geomagnetic sensor, gyro /accelerometer combo sensor
	Notification	Sound, LED indicator, vibrator
	Audio	2 microphones, 1 for noise cancellation; 1 speaker
Performance	Keypad	1 Power key, 2 scan keys, 1 volume (+/-) keys, 1 multifunctional key
	CPU	Octa-core 2.8GHz
	RAM+ROM	UFS: 4GB + 64GB / 8GB + 256GB (optional)
Communication	Expansion	Supports up to 256GB TF card (Supports Extreme Micro SD Card 512GB)
	WLAN	Supports 802.11 a/b/g/n/ac; fast roaming supported; optional Wi-Fi 6
	WWAN (Global)	2G: GSM / EDGE / GPRS (850/900/1800/1900)
		3G: WCDMA (B1/B2/B4/B5/B8)
		4G: LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B17/B20/B25/B26/B28A/B28B; LTE-TDD: B34/B38/B39/B40/B41;
	VO-LTE	Support Vo-LTE HD video voice call
	Bluetooth	Bluetooth 5.0, headset support (optional Bluetooth 5.1)
	GNSS	GPS, BeiDou, GLONASS, and Galileo; AGPS supported

Data Collection	Camera	Rear Camera	16MP Autofocus with flash
		Front Camera	5MP
	Barcode Scanning (Optional)	2D Scanner	Zebra SE4710, SE55; CM60
		1D Symbologies	UPC/EAN, Code128, Code39, Code93, Code11, Interleaved 2 of 5, Discrete 2 of 5, Chinese 2 of 5, Codabar, MSI, RSS, etc.
		2D Symbologies	PDF417, MicroPDF417, Composite, RSS, TLC-39, Datamatrix, QR code, Micro QR code, Aztec, MaxiCode; Postal Codes: US PostNet, US Planet, UK Postal, Australian Postal, Japan Postal, Dutch Postal (KIX), etc.
	NFC	Frequency	13.56MHz
		Protocol	ISO14443A/B, ISO15693, NFC-IP1, NFC-IP2, etc.
		Chips	M1 card (S50, S70), CPU card, NFC tags, etc
		Range	2-4cm
Developing Environment	Operating System	Android 16	
	SDK	Chainway Software Development Kit	
	Language	Java	
	Tool	Eclipse / Android Studio	
Environmental	Operating Temperature	-4°F to 122°F / -20°C to +50°C	
	Storage Temperature	-40°F to 158°F / -40°C to +70°C	
	Humidity	5%RH - 95%RH non condensing	
	Drop Specification	Passed 1.5m / 4.92ft. drop test to MIL-STD-810H standard	
	Tumble Specification	1000 × 0.5m / 1.64ft. falls, IEC compliant	
	Sealing	IP67 per IEC sealing specifications	
	ESD	± 15kV air discharge, ± 8kV contact discharge	
Accessories	Standard	9V / 2A power adapter, USB cable, Hand Strap	
	Optional	Handle, charging cradle, holster, etc.	

Extended Version

MC51S

Built-in RFID Reader



Specification (*Specifications not listed are the same as the standard MC51S)		
Physical Characteristics	Dimensions	161.0 x 77.8 x 15.5mm (Thickest Part: 29.2mm) 6.34 x 3.06 x 0.61 in (Thickest Part: 1.15 in.)
	Weight	323g / 11.39oz. (device with battery)
	Interfaces	USB 3.0 Type-C with OTG and water-drop detection; Bottom contacts: 2-pin for charging
	GNSS	GPS, BeiDou, GLONASS, and Galileo; AGPS supported; supports L1+L5 dual-frequency positioning
	NFC	No NFC function
RFID UHF (built-in)	Engine	Based on Impinj E-Series chip
	Frequency	865-868 MHz/920-925 MHz/902-928 MHZ (custom-design for frequency band)
	Impinj Gen2x	Supported
	Protocol	EPC global Class 1 Gen 2 / ISO18000-63 RFID
	Transmit Power	1-30dBm, step 1dB
	Antenna	Circularly polarized antenna
	Fastest Read Rate	750+ tags/sec
	Max Read Range	5m

Extended Version

MC51S

UHF RFID Reader



Specification (*Specifications not listed are the same as the standard MC51S)		
Physical Characteristics	Dimensions	165.0 × 83.8 × 138.0mm / 6.50 × 3.30 × 5.43in.
	Weight	707g / 24.94oz. (including handle, back clip, and battery)
	Handle	Handle with removable 5,200mAh battery
	Interfaces	USB 3.0 Type-C with OTG and water-drop detection; Bottom contacts: 2-pin for charging; Rear contacts: 12-pin contacts for UHF back clip and battery charging
RFID UHF (back clip)	Engine	Based on Impinj E-Series chip
	Frequency	865-868MHz / 920-925MHz / 902-928MHz (custom-design for frequency band)
	Impinj Gen2x	Supported
	Protocol	EPC global Class 1 Gen 2 / ISO18000-63 RFID
	Transmit Power	1-30dBm, step 1dB
	Antenna	Circularly polarized antenna
	Fastest Read Rate	1300+ tags/sec
	Max Read Range	30m+ (varies by tag)

* Read rates tested in low-interference lab; distances measured outdoors in open. Actual results may vary with environment and tags.

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Notice: Product specifications are subject to change without
prior notice. | Model: MC51S | Version: V2.1