

# MC51

## 5G Mobile Computer

Advanced Configuration, Superior Performance,  
Stable Wireless, Efficient Experience



The Chainway MC51 is a next-gen 5G mobile computer built for frontline efficiency. It combines strong processing, fast wireless, and versatile data capture. Featuring a high-performance CPU and 6" HD+ display (FHD optional), it supports 5G, Wi-Fi 6E, and Bluetooth 5.2 for reliable high-speed connectivity. With built-in or pistol-grip UHF options using a self-developed Impinj-based module, it delivers excellent RFID performance with full Gen2X support. The MC51 also supports barcode scanning and NFC, making it ideal for retail, warehousing, utilities, and asset management.

### Rugged Design For Harsh Environments

The MC51 is engineered for industrial durability, ensuring reliable operation in harsh environments. It passes MIL-STD-810H drop tests from 1.5 m, 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 MC51 delivers outstanding data capture performance with multiple high-performance modules, meeting the diverse requirements of different industries. It 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 MC51 offers UHF RFID options that support bulk data capture, enabling more efficient data collection workflows.

### Flagship Performance With Long-term Support

The new MC51 features Qualcomm's 5G IoT long-life platform, with guaranteed chip supply through 2030 and beyond. Its 2.4 GHz CPU and nearly 440,000 AnTuTu score handle complex tasks easily. Running Android 14 with Google AER enterprise certification, it offers enhanced security, stability, and long-term OS updates. Standard 4 GB + 64 GB memory is expandable up to 8 GB + 256 GB, with US (Americas) and EMEA versions for global use.

### 6 " FHD+ Display, Durable & Multi-Touch

The MC51 comes with a 6" HD+ display (1440 X 720) and an optional FHD (2160 X 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 5G & Wi-Fi 6E Connectivity

The MC51 integrates advanced 5G, Wi-Fi 6E, and Bluetooth 5.2 for fast, stable, and intelligent wireless connectivity. Wi-Fi 6E uses the new 6 GHz band with 2 X 2 MIMO antennas for higher speeds, lower latency, and stable connections in dense or high-interference environments, supporting seamless roaming for uninterrupted operations. 5G ensures rapid file transfers and smooth remote access, while Bluetooth 5.2 improves stability, latency, and multi-device communication. Designed for efficient mobile work, the MC51 delivers reliable connectivity even in complex environments.

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

The MC51 is equipped with a 5,000 mAh 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.

| Specification            |                                |                                                                                                                                                                                            |                                                                                                                                                                                                           |
|--------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical Characteristics | Dimensions                     | 161.0 x 77.8 x 15.5mm / 6.34 x 3.06 x 0.61 in.                                                                                                                                             |                                                                                                                                                                                                           |
|                          | Weight                         | 297g / 10.48oz. (device with battery)                                                                                                                                                      |                                                                                                                                                                                                           |
|                          | Display                        | 6" display, 1440 x 720; optional 2160 x 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 3.1 Type-C with OTG and water-drop detection;<br>Bottom contacts: 2-pin for charging;<br>Rear contacts: 2-pin for handle button extension;<br>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;                                                                                                                                        |                                                                                                                                                                                                           |
|                          | Keypad                         | 1 Power key, 2 scan keys, 1 volume (+/-) keys, 1 multifunctional key                                                                                                                       |                                                                                                                                                                                                           |
| Performance              | CPU                            | Octa-core, 2.4GHz                                                                                                                                                                          |                                                                                                                                                                                                           |
|                          | RAM+ROM                        | UFS: 4GB +64GB / 8GB +256GB (optional)                                                                                                                                                     |                                                                                                                                                                                                           |
|                          | Expansion                      | Supports up to 256GB TF card (Supports Extreme Micro SD Card 512GB)                                                                                                                        |                                                                                                                                                                                                           |
| Communication            | WLAN                           | Supports 802.11 a/b/g/n/ac/ax-6E, tri-band 2.4/5/6GHz; 2 x 2 MIMO antennas; fast roaming supported                                                                                         |                                                                                                                                                                                                           |
|                          | WWAN<br>(Europe, Asia)         | 2G: GSM/EDGE/GPRS (850/900/1800)                                                                                                                                                           |                                                                                                                                                                                                           |
|                          |                                | 3G: WCDMA (B1/B5/B8)                                                                                                                                                                       |                                                                                                                                                                                                           |
|                          |                                | 4G: LTE-FDD: B1/B3/B5/B7/B8/B20/B28A/B28B;<br>LTE-TDD: B34/B38/B39/B40/B41;                                                                                                                |                                                                                                                                                                                                           |
|                          |                                | 5G: N2/N3/N5/N7/N12/N13/N25/N26/N28/N38/N41/N77/N78                                                                                                                                        |                                                                                                                                                                                                           |
|                          | WWAN<br>(America)              | 2G: GSM/EDGE/GPRS (850/1900)                                                                                                                                                               |                                                                                                                                                                                                           |
|                          |                                | 3G: WCDMA (B2/B4/B5)                                                                                                                                                                       |                                                                                                                                                                                                           |
|                          |                                | 4G: LTE-FDD: B2/B4/B5/B7/B12/B13/B25/B26/B28;<br>LTE-TDD: B38/B41;                                                                                                                         |                                                                                                                                                                                                           |
|                          |                                | 5G: N2/N3/N5/N7/N12/N13/N25/N26/N28/N38/N41/N77/N78                                                                                                                                        |                                                                                                                                                                                                           |
|                          | Vo-LTE                         | Support Vo-LTE HD video voice call                                                                                                                                                         |                                                                                                                                                                                                           |
|                          | Bluetooth                      | Bluetooth 5.2, headset support                                                                                                                                                             |                                                                                                                                                                                                           |
|                          | GNSS                           | GPS, BeiDou, GLONASS, and Galileo; AGPS supported                                                                                                                                          |                                                                                                                                                                                                           |
| Data Collection          | Camera                         | Rear Camera                                                                                                                                                                                | 16MP Autofocus with flash                                                                                                                                                                                 |
|                          |                                | Front Camera                                                                                                                                                                               | 5MP                                                                                                                                                                                                       |
|                          | Barcode Scanning<br>(Optional) | 2D Scanner                                                                                                                                                                                 | Zebra SE4710, SE55; CM60                                                                                                                                                                                  |
|                          |                                | 1D Symbolologies                                                                                                                                                                           | UPC/EAN, Code128, Code39, Code93, Code11, Interleaved2 of 5, Discrete 2 of 5, Chinese 2 of 5, Codabar, MSI, RSS, etc.                                                                                     |
|                          |                                | 2D Symbolologies                                                                                                                                                                           | PDF417, MicroPDF417, Composite, RSS, TLC-39, Datamatrix, QR code, Micro QR code, Aztec, MaxiCode;Postal Codes: US PostNet, US Planet, UK Postal, Australian Postal, JapanPostal, 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                                                                                                                                                                                                     |
| Data Collection          | Operating System               | Android 14                                                                                                                                                                                 |                                                                                                                                                                                                           |
|                          | 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 1.5-meter (4.92 ft) drop test compliant with MIL-STD-810 Hmilitary standard |
|               | Tumble Specification  | 1000 x 0.5m/1.64ft. falls, IEC compliant                                           |
|               | Sealing               | IP67                                                                               |
|               | ESD                   | ±15kV air discharge, ±8kV contact discharge                                        |
| Accessories   | Standard              | 9V/2A power adapter, USB cable, wrist strap                                        |
|               | Optional              | Handle, charging cradle, holster, etc.                                             |

\* MC51 models being manufactured for the Indonesian Market, do not include Voice Call (Phone Call) function. WAN module included on those models only support DATA transfer.

Extended Version

MC51

MC51 Built-in RFID Reader



| Specification (*Specifications not listed are the same as the standard MC51) |                   |                                                                                                  |
|------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------|
| Physical Characteristics                                                     | Dimensions        | 161.0 x 77.8 x 15.5mm (Thickest Part: 29.2mm)<br>6.34 x 3.06 x 0.61 in (Thickest Part: 1.15 in.) |
|                                                                              | Weight            | 323g / 11.39oz. (device with battery)                                                            |
|                                                                              | Interfaces        | USB 3.1 Type-C with OTG and water-drop detection;<br>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<br>(custom-design for frequency band)                        |
|                                                                              | Impinj Gen2x      | Supported                                                                                        |
|                                                                              | Protocol          | EPC global Class 1 Gen 2 / ISO18000-63 RFID                                                      |
|                                                                              | Transmit Power    | 1-30dBm, step 1dBm                                                                               |
|                                                                              | Antenna           | Circularly polarized antenna                                                                     |
|                                                                              | Fastest Read Rate | 750+ tags/sec                                                                                    |
|                                                                              | Max Read Range    | 5m                                                                                               |

Extended Version

MC51

UHF RFID Reader



| Specification (*Specifications not listed are the same as the standard MC51) |                   |                                                                                                                                                                    |
|------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical Characteristics                                                     | Dimensions        | 165.0 × 83.8 × 138.0mm / 6.50 × 3.30 × 5.43 in.                                                                                                                    |
|                                                                              | Weight            | 707g / 24.94oz. (including handle, back clip, and battery)                                                                                                         |
|                                                                              | Handle            | Handle with removable 5,200mAh battery                                                                                                                             |
|                                                                              | Interfaces        | USB 3.1 Type-C with OTG and water-drop detection;<br>Bottom contacts: 2-pin for charging;<br>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 1dBm                                                                                                                                                 |
|                                                                              | 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: MC51 | Version: V2.0