

Trimble MX7

MOBILE MAPPING SOLUTION

The Trimble® MX7 is a **vehicle-mounted imaging system** enabling fast and productive capture of road, infrastructure and city environmental data.

Capture 360-degree, geo-referenced images at highway speeds to vastly reduce project operating cost whilst improving public safety. Then, use Trimble MX software to organize, visualize, interpret and efficiently extract structured data that can be integrated into a GIS and shared across your organization or via the Internet.

Capture Now, Measure Later

Equipped with a metric panoramic camera and a direct geo-referencing system, the MX7 enables asset managers to build a complete inventory for municipal road networks, bridges, buildings, highways, and airport infrastructure. The Trimble MX7 mobile imaging solution allows you to capture environmental data for a complete job site or project area in a single site visit. Decision makers can then use the captured data to undertake analyses and drive decisions based on the extracted information, from their office location.

The Trimble MX7 is the ideal solution for organizations looking to generate deliverables such as:

- ▶ Geo-located immersive panoramic images
- ▶ GIS data capture, extraction and maintenance
- ▶ City maps & models
- ▶ Change analyses over time
- ▶ Road asset inventories
- ▶ Visual pavement condition assessment

Enter the World of Mobile Imaging

The MX7 is a compact, lightweight, and rugged system that can be mounted on vehicles of all sizes. Field software provides an intuitive data capture workflow, allowing the operator to rapidly set system parameters and manage a data capture mission.

Online background maps can be utilized for improved visualization of the acquired data, providing a complete overview of your project area.



The MX7 Advantage

- ▶ Highly portable mobile mapping system able to deploy on all sizes of vehicles
- ▶ Simple installation and browser based operation from a smart device
- ▶ State of the art Trimble GNSS and Inertial technology
- ▶ A system dedicated to 360-degree image documentation
- ▶ Extract topological GIS data and share deliverables using Trimble's software products

APPLICATIONS



Urban Infrastructure

Acquiring, owning and sharing Trimble MX7 data allows local authorities to effectively locate assets along a transportation corridor and assess their condition. Owning and controlling your own mobile mapping system allows you to collect timely, current data, whenever the need arises and rapidly update your geodatabase. Inspection data can be stored as attribute information and transferred to a GIS for further spatial analysis. Established geodatabases can be updated and existing schemas utilized.

- ▶ Capture, manage and inspect street furniture inventories - road signs, power poles, cabinets, chambers
- ▶ Inspect the condition of road barriers, road signs and road pavement markings
- ▶ Follow up projects completed by contractors to ensure remedial works have been completed within scope

Road Asset Management

For highway inspection, using the Trimble MX7 alleviates the need for dangerous pedestrian field inspections - avoiding the potential requirement for road closures. Large volumes of street furniture inventory data can be captured during a single day and extracted in the office. Metadata can be stored in attribute tables compatible with many GIS systems.

- ▶ Inspect road surfaces for potholes, cracking and road marking condition
- ▶ Efficiently capture all street furniture along a road corridor
- ▶ Use existing or create new data schemas
- ▶ Undertake change analysis over time

Fiber to The Home Operations

Many Fiber to Home operators have turned to mobile mapping to improve the visibility they have into the environment of a project area. Speed of data capture allows concurrent project sites to be captured while data extraction and visual inspection workflows provide the visibility needed for project planning and post project rehabilitation verification.

- ▶ Identify ground surface materials
- ▶ Locate existing utility infrastructure
- ▶ Use metric data for reliable cost estimation of proposed new infrastructure
- ▶ Measure offsets to property boundaries
- ▶ Understand pole locations and existing fixture types

Other Applications

- ▶ Rail Infrastructure
- ▶ Construction Monitoring
- ▶ Environmental Monitoring
- ▶ Surveillance & Security
- ▶ Site Documentation
- ▶ Taxation and Disputes

KEY FEATURES



- ▶ Lightweight & highly portable
- ▶ Precisely positioned street-level imagery
- ▶ Easy installation & simple operation
- ▶ Complete field-to-finish solution



COLLECT

Use the Trimble MX7 to quickly obtain geo-referenced images:

- ▶ Control data acquisition with a smart device
- ▶ Online background maps for route tracking and supervision
- ▶ Import of .kml for easy mission planning and data acquisition



PROCESS

Locate extracted assets and add attribute data:

- ▶ Industry leading direct geo-referencing to determine the best trajectory
- ▶ Inspect the condition of assets and utilities
- ▶ Integrate with handheld inspection workflows



DELIVER

Produce high-quality deliverables for your customers and stakeholders:

- ▶ Export GIS and CAD data
- ▶ Street-level immersive imagery
- ▶ Connect to host systems



PUBLISH

Publish data for sharing across the internet:

- ▶ Share images and extracted data resources
- ▶ Collaborate with project stakeholders
- ▶ Use plugins to extract into host environments
- ▶ Avoid site revisits

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PERFORMANCE AND SPECIFICATION

MX7 SYSTEM	
Resolution	30 MP (5 MP x 6 CMOS sensor)
Field of view	90% of full sphere
Spherical distance	Calibrated from 2 m to infinity
Storage	2 TByte SSD
POSITIONING SUB-SYSTEM (RMS ERROR) ¹	
Type	Trimble AP15 GNSS-Inertial System
Technology	Advanced Applanix IN-Fusion™ GNSS-Inertial integration technology
# of GNSS channels	220
Inertial measurement unit	Applanix IMU-69 (non ITAR) with 200 Hz data rate
Position (m): No GNSS outages ^{2,4} 1 km or 1 minute GNSS outage ^{2,4}	0.02–0.05 (post-processed) ² 0.2–0.8 (post-processed) ²
True Heading (deg): No GNSS outages ^{2,4} 1 km or 1 minute GNSS outage ^{2,4}	0.08 (post-processed) ³ 0.2 (post-processed) ³

ELECTRICAL DATA	
Power	12 V to 24 V DC (typical 100 W)
POWER CONSUMPTION	
During startup	Up to 10 A @ 12 V (120 W)
During operation	8 A @ 12 V (96 W) ⁵
ENVIRONMENTAL CHARACTERISTICS	
Operating temperature	0 °C to +35 °C
IP rating	IP65 (MX7 sensor head) IP20 (MX7 power box)
PHYSICAL CHARACTERISTICS	
Weight	11.3 kg
OPTIONS	
Positioning	Distance measurement indicator (DMI)
Orientation	GNSS Azimuth Measurement System (GAMS)

- 1 Typical performance in a standard road vehicle with appropriate initialization and dynamics. Actual results are dependent upon satellite configuration, atmospheric conditions and other environmental effects.
 2 Typical mission profile, max RMS error.
 3 POSpac MMS.
 4 With DMI option.
 5 Depending on temperature.

Specifications subject to change without notice.

Contact your local Trimble Authorized Distribution Partner for more information

NORTH AMERICA
 Trimble Inc.
 10368 Westmoor Dr
 Westminster CO 80021
 USA

EUROPE
 Trimble Germany GmbH
 Am Prime Parc 11
 65479 Raunheim
 GERMANY

ASIA-PACIFIC
 Trimble Navigation
 Singapore PTE Limited
 3 HarbourFront Place
 #13-02 HarbourFront Tower Two
 Singapore 099254
 SINGAPORE