MACH7

HIGH PRODUCTION MICROFICHE SCANNER

MEKEL Technology
A CROWLEY COMPANY

In 1987, Mekel Technology introduced the world's first production microfilm scanner, followed closely by the first commercial microfiche scanner.
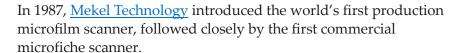
Today, the Mekel MACH7 microfiche scanner is manufactured by The Crowley Company and is the most advanced microfiche, jacket and aperture card scan system on the market. Recognized throughout the industry for its automation, reliability and ease-of-use, the MACH7 scans even the most difficult fiche with impressive speed and is capable of capturing to FADGI, Metamorfoze and ISO standards.

> " Having used the Mekel scanners for more than a decade, I can say that the quality and capabilities of the scanners keep advancing. The MACH7 scanner has built on the success of past models to become the quality standard in capture mechanics and electronics. "
>
> **~ Luc Bodson, Technical Engineer, iGuana**

KEY FEATURES

Dual-Camera System

The only scanner in its class to use a dual-camera system, the MACH7's single-pass, pre-scan camera locates images before a second camera captures the frames as high-quality images. This ensures that only images and not blank film are scanned, saving time/digital storage space and eliminating rescans.

Versatility

Step and Repeat. COM. Jackets and more. Using a CCD camera, lens and smoothlight fiber optic lighting, the MACH7 expertly converts any microfiche format to a digital file. Both bitonal and grayscale images can be captured simultaneously without impacting speed.

Superior Image Quality

The MACH7 delivers clear and consistent image quality while offering a variety of automatic image adjustment features including: cropping; rotation; deskew; mirroring; inverting and focus.

Speed

Combining capture speeds of up to 200+ images per minute with a large hopper holding up to 75 microfiche, the MACH7 is built to facilitate fast, automated batch scanning. A removable loading arm comes as standard to further automate the loading/unloading process. Manual feed is always an end user option.

External PC Drives the MACH7

Maximum uptime and easy technology updates.

Advanced Software Features

The MACH7 uses acclaimed Mekel Quantum software suite for precise, accurate front-end capture and post-capture editing. Features include:

- ▶ **Serpentine scan** option to increase throughput and life of hardware
- ▶ **OCR Title Naming** to recognize header or title text for accurate, convenient file naming
- ▶ **Windows 11** support
- ▶ **Optical Character Recognition** to create text searchable files (QuantumProcess only)
- ▶ **Opaque Capture** for printed aperture card text and microfiche title bars

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SIMPLE AND POWERFUL SOFTWARE

The MACH7 is powered by FastFiche - an easy and intuitive software - and offers the ability to use the advanced Quantum software suite, all of which are operable within minutes of installation.

For those with multi-media collections, the QuantumScan and QuantumProcess softwares can be used on both microfiche and microfilm images scanned using MACH-series scanners.

FastFiche
On-the-fly Scanning and Processing Software

▶ Easy-access tabs for quick job set-up
▶ Advanced menus for detailed image enhancement
▶ Dual-scan capability to capture and view both bitonal and grayscale images simultaneously without impacting speed
▶ Image quality controls and previews for real-time image enhancement
▶ Flexible file-naming capabilities

Quantum Scan
Advanced Capture Software

▶ Optimum resolution
▶ Project presets
▶ Image quality settings
▶ Pre-scan testing
▶ Multiple ribbon output options
▶ Easy workflow integration

Quantum Process
Revolutionary Processing Software

▶ Optical Character Recognition (OCR) for keyword search
▶ Automatic frame or fixed-grid image detection
▶ Batch processing
▶ Zoom capability
▶ Editing toolkit
▶ Fixed-grid frame replication
▶ Irregular frame flag
▶ Blackout framing
▶ Image enhancement
▶ Dual output option
▶ Document separation tagging

HARDWARE

Camera/Optics	Up to 12-bit dynamic range with gamma correction grayscale output. Full depth of pixels processed. Advanced adaptive Automatic Gain Control (AGC) handles varying film density in real-time across the fiche. Dual-camera system locates frames before capture. 80 megapixel/second camera; 160 megapixel/second output. Full 8,192 pixel CCD array for highest true optical dpi in the industry. Mekel smoothlight fiber optic bundle provides balanced lighting across entire scan area; no hot spots or shadowing
Resolution	100-600 true optical dpi; 4x-96x reduction ratio
Film Handling	Manual or automatic loading/unloading option. Input hopper capacity up to 75 fiche. Automatic aperture card loading arm (optional)
Speed (Fully Processed)	24x/200 dpi: Up to 200 ppm. 42x/200 dpi: Up to 200 ppm. 48x/200 dpi: Up to 260 ppm
Film Types	Supports all standard aperture card and fiche types including: standard or long jackets; COM; AB Dick; Ultra Fiche and Microx; 16 mm or 35 mm; combo 16/35 mm; simplex or duplex; positive or negative; diazo; silver; vesicular; duplicates; cine/comic mode formats
Hardware Enhancements	Microcard module (optional). Top prescan lamp for aperture card text and opaque title bar capture (optional)

GENERAL TECHNICAL INFORMATION

Agency Approvals	FCC, CE and RoHs certification
Power Requirement	50Hz or 60Hz/100v to 240v AC/800 watt single-phase, switchable for domestic or international use
Operating System	Windows 10 and 11 Pro. Includes external Dell high-end multi-processor, multi-core workstation for maximum uptime and performance. Visit www.thecrowleycompany.com for full PC specs
Dimensions (LxWxH)	33 x 18 x 19 in (838 x 457 x 483 mm)
Weight	130 lbs/56kg

CAPTURE FEATURES

Scan Options	Microfiche	Aperture Card
	Scan modes: full sheet; row-by-row; serpentine; single	Film image. Full card capture (optional with top pre-scan lamp)
	User-defined title bar/header (translucent/opaque) pre-scans for layout, naming and indexing references. Simultaneous grayscale and bitonal capture and output for increased efficiency (FastFiche and QuantumProcess)	
Frame Detection	Single-pass intelligent pre-scan automatically detects all images regardless of size or location. "Presence Pre-scan" feature allows for faster throughput on COM by automatically detecting and scanning only those frames that contain data	
Image Digitization and Processing	Real-time image sharpen and enhancement done in hardware with no reduction in throughput. Continuous automatic scanning. Interactive selection of individual images or automatic capture of entire fiche row as an individual image. Real-time automatic and manual control of rotation, cropping, deskew and automatic compression of film background density. Real-time image processing provides 5x the typical processing speed. Task set up by job or saved in set up file. Optical Character Recognition (OCR) of selected title bar text. Optical Character Recognition (OCR) of final output images (QuantumProcess only)	
Viewing/ Browsing	View full or partial screen in real-time or by thumbnail, emulating fiche layout. Real-time dual view of bitonal and grayscale images (FastFiche and QuantumProcess)	

OUTPUT

File Formats	Simultaneous output to grayscale and bitonal formats (FastFiche and QuantumProcess). Output to single or multi-page TIFF and PDF (FastFiche and QuantumProcess). Output to TIFF (G4/LZW/uncompressed), JPEG, PDF, PDF/A, JPEG2000, bitonal CALS type 1 and others (QuantumProcess only). OCR output to single/multi-page .PDF, .TXT and HOCR formats (QuantumProcess only)

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