

# Technical Data Sheet

# 3M™ AT9000 MK2 Full Page Reader

**Date Issued** July 16, 2012

**Product Use**



The 3M™ AT9000 MK2 Full Page Reader inspects and images Machine Readable Travel Documents (MRTDs) and other documents suitable for use in a wide variety of government and commercial applications.

**Functions include:**

- Support for biometrically enabled travel documents containing contact and contactless integrated circuit chips (eIDs, and ePassports)
- Optical document analysis in border management, police, transportation and other commercial markets
- Accurate, true-colour images, with patent-pending Anti-Glare technology to remove document laminate reflections or ambient light interference
- Removable hood to support oversized or very thick documents
- Quality assurance and chip encoding applications during the document issuance process

**Key Features & Functionality**



- Powered from USB or external power supply (optional)
- Multiple document reading and imaging in 24-bit colour using true-colour image matching
- Patent-pending Anti-Glare technology eliminates image artifacts due to laminate or OVDs
- 400 DPI high resolution imaging
- Multiple wavelength illumination – Visible, IR, UV, 3M™ Confirm™ Security Laminate
- OCR data capture
- Complete access to OCR data and images captured via Software Development Kit (SDK)
- Access to images as BMP, PNG or JPEG format
- Hoodless operation in most environments
- Auto-triggering of document capture – presence of document is automatically detected
- Windows® XP, Windows Vista® or Windows® 7 compatible
- USB 2.0 high speed compatible
- Integrated USB 2.0 Hub – 2 ports for external peripherals (magnetic strip reader, 2D barcode gun, etc.)<sup>1</sup>
- No moving parts and internally sealed optical chamber to prevent dust ingress
- Carbon (optional) glass coating to help reduce scanning surface scratching

<sup>1</sup> Optional external power supply required to activate rear panel peripheral USB ports



<p><b>Comprehensive Software Features</b></p>	<ul style="list-style-type: none"> <li>• Flexible software interface allows host application to select which illumination sources to use, image type, image compression, photo extraction, reflection or ambient light elimination, colour enhancement, etc.</li> <li>• Simple high level API for quick program development or detailed low level API for fine control of all reader functions. SDK provides full configuration API</li> <li>• Contactless or contact IC reading for ePassports (LDS 1.7) including Active and Passive authentication, Basic Access Control and Extended Access Control (PKI 1.11). The SDK provides writing capability using APDUs.</li> <li>• Full SDK including DLLs, code examples, utilities and demonstration programs. Can be used with Visual C++®, Java® and Microsoft® .NET Framework for Visual Basic® .NET and C#</li> </ul>
<p><b>Reading Capability</b></p>	<p>The 3M™ AT9000 MK2 Full Page Reader reads the following:</p> <ul style="list-style-type: none"> <li>• ICAO compliant documents in near infrared (IR) per ICAO 9303 specification Parts 1-4</li> <li>• ISO 14443 Type A and B contactless ICs at 13.56 MHz (optional)</li> <li>• ISO 7816 Class A and AB smart cards (optional)</li> <li>• ISO 7810 and ISO 7811 AMMVA 3-Track Mag (optional)</li> <li>• 1D barcodes (2 of 5 interleaved, 2 of 5 industrial, Code 128, and Code 39)</li> <li>• 2D barcodes (PDF 417, QR, DataMatrix™ and Aztec formats) from paper documents and some mobile devices</li> </ul>
<p><b>Illumination</b></p>	<p>The reader illuminates documents in multiple wavelengths and lighting orientations:</p> <ul style="list-style-type: none"> <li>• Near IR B900, 880nm, +/-5%</li> <li>• White visible, 430-700nm</li> <li>• Ultraviolet (UVA): 365nm</li> <li>• 3M™ Confirm™ Security Laminate (optional) <ul style="list-style-type: none"> <li>- 24 Bit Color</li> <li>- 8 Bit Monochrome IR</li> </ul> </li> </ul>
<p><b>Resolution</b></p>	<ul style="list-style-type: none"> <li>• Sensor: 3.1 Megapixels, CMOS, RGB 24 bit color system</li> <li>• Standard 400 DPI image resolution</li> </ul>
<p><b>Contact Smart Card Option</b></p>	<ul style="list-style-type: none"> <li>• Supports ISO 7816 Class A and AB smart card</li> <li>• T=0, T=1 protocol support</li> <li>• Communication speed up to 344,105 bps (PPS, FI parameter)</li> <li>• Frequency up to 8 MHz (PPS, DI parameter)</li> <li>• 8 contacts – ISO location</li> <li>• Sliding contact</li> </ul>
<p><b>ePassport (RFID) Option</b></p>	<p>Contactless IC reading and writing capability according to:</p> <ul style="list-style-type: none"> <li>• ISO 14443 Type-A and Type-B using a PC/SC interface</li> <li>• ePassport support for ICAO 9303 using included SDK</li> <li>• All standardized rates, up to 848 Kbps, read-out times depend on RFID tag, operating system and amount of data stored in the chip</li> </ul>

<b>Enhanced Document Authentication Option</b>	<p>Enhanced Document Authentication uses optical pattern matching to:</p> <ul style="list-style-type: none"> <li>• Identify documents based on the type and country of origin</li> <li>• Match security features captured from a document against a database of trusted security features – including UV, 3M™ Confirm™ laminate and visible patterns</li> <li>• Check for presence of UV dull paper</li> <li>• Verify that areas are blank, devoid of patterns, text or printed matter</li> </ul>
<b>Quality Assurance Option</b>	<ul style="list-style-type: none"> <li>• Positional quality assurance (QA) – assures document is printed to applicable ISO, ICAO or customer standards</li> <li>• Measures skew, left margin, line spacing, character spacing, line length, print contrast, stroke width and distance from each character to the bottom of the document</li> </ul>
<b>Firmware Upgrade</b>	<ul style="list-style-type: none"> <li>• Upgradeable firmware via USB 2.0 interface</li> <li>• Non-volatile configuration and calibration accessed via USB 2.0 interface</li> <li>• Configuration can be saved to a file for backup or maintenance</li> </ul>
<b>Regulatory</b>	<ul style="list-style-type: none"> <li>• FCC Part 15 Class A</li> <li>• UL, UL-C</li> <li>• CE, CB</li> <li>• WEEE/RoHS<sup>2</sup></li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>• Humidity: 20 to 95% (R.H. non-condensing)</li> <li>• Temperature: -10° to 50° C operating; -20° to 50° C storage</li> <li>• IP50 rating for dust ingress protection in the optical chamber</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>• Keystone lock</li> <li>• Recessed power switch on rear panel</li> </ul>
<b>Minimum PC Specification</b>	<p>Software must be installed on a customer-supplied PC. The following minimum configuration is recommended:</p> <ul style="list-style-type: none"> <li>• 1.7 GHz Pentium® 4</li> <li>• 512 MB DRAM</li> <li>• USB 2.0</li> <li>• 100 MB of Hard Drive space for software</li> <li>• Windows® XP, Windows Vista® or Windows® 7 operating systems, 32 or 64 bit</li> </ul>
<b>Standard Dimensions</b>	<ul style="list-style-type: none"> <li>• Length: 19.0 cm (7.5")</li> <li>• Width: 16.2 cm (6.4")</li> <li>• Height: 15.7 cm (6.2") (with light shield)</li> <li>• Weight: &lt; 1 kg or 2.2 lbs</li> </ul>

<sup>2</sup> RoHS compliant means that the product or part does not contain any of the following substances in excess of the maximum concentration values in any homogeneous material, unless the substance is in an application that is exempt under RoHS, as amended: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. This information represents 3M's knowledge and belief, which may be based on information provided by third party suppliers to 3M

<p><b>Dimensions with Smart Card Option</b></p>	<ul style="list-style-type: none"> <li>• Length: 20.4 cm (8.0")</li> <li>• Width: 16.2 cm (6.4")</li> <li>• Height: 15.7 cm (6.2")</li> <li>• Weight: &lt; 1.1 Kg or 2.4 lbs</li> </ul>
<p><b>Status Indicators</b></p>	<p>The readers provide user feedback via the following status indicators:</p> <ul style="list-style-type: none"> <li>• Red - Read Error LED</li> <li>• Green - Valid Read LED</li> <li>• Yellow - Busy LED</li> <li>• Blue - Ready LED</li> </ul> <p>The readers perform a power-up self-test and indicate failure using status LEDs.</p>
<p><b>Power</b></p>	<p>Powered from USB 2.0 port or via optional universal input external power supply<sup>3</sup>:</p> <ul style="list-style-type: none"> <li>• Power consumption: 5 volts DC, 500mA (when USB 2.0 powered)</li> </ul> <p>External PSU:</p> <p>Input voltage 100 - 240 VAC plus/minus 10%          Frequency 47 - 63 Hz          Detachable IEC320 AC mains power cable          Locking 3 pin connector</p>
<p><b>Service &amp; Maintenance</b></p>	<ul style="list-style-type: none"> <li>• One-year warranty</li> <li>• 24-hour service request via toll-free number</li> <li>• Annual maintenance agreement available</li> </ul>
<p><b>Contact 3M</b></p>	<p><a href="http://www.3M.com/security/SecuritySystems">www.3M.com/security/SecuritySystems</a>          3M Security Systems Division          Opentec Systmes LLC          P O Box 31720          Dubai - UAE          Contact: Jeremy Daniel          Cell: 971 50 9123 506          Email: <a href="mailto:sales@opentecme.com">sales@opentecme.com</a>          Off: +971 4 28 222 63</p>

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<sup>3</sup> Optional external power supply required to activate rear panel peripheral USB ports

