

## Biometric *Tri-Scan* reader for the Symbol MC70



The Biometric *Tri Scan* reader is a reader that combines **CONTACT SMART CARD, CONTACTLESS SMART CARD** and **FINGERPRINT BIOMETRIC CAPTURE**. The biometric core uses a rugged, high image quality fingerprint area sensor. The *Tri scan* reader is compatible with most contact AND contactless Smart Cards including all Mifare cards. The contactless card reader is compatible with the CAC card and ICAO ePassports.

The *Tri Scan* reader attaches as a snap-on unit to the base of the MC70 - the mechanical design of the module enables the attachment to remain compatible with existing MC70 accessories such as the desktop charge cradle and the car charger. The module may be quickly removed from the MC70, or semi-permanently attached with two screws.

The fingerprint reader provides full enrolment, identification and verification functionality. Templates may be stored locally on the reader, or downloaded as required to the reader from the MC70 terminal. The sensor has a rugged coating to provide Electro Static Discharge immunity in excess of 12kV and the ability to withstand everyday wear and tear. The fingerprint sensor uses Active Capacitance Sensing. This method has the advantage of allowing a thick front coating to be

used on the sensor which provides the sensor with its high ESD protection (12kV) and resistance to wear. It also allows the sensor to adapt to a wide range of skin types and conditions. The sensor has a high resolution (508 dpi) and high pixel resolution (256 level grey scale). These features ensure a high quality image is captured. In addition the design of the fingerprint sensor guides the user's finger to an optimum location to maximise accuracy.

In the enrolment process the fingerprint data is captured and a template is created by an algorithm running on the sensor. The template is based on the content and relationship of distinct areas identified from the image. The verification process is performed by comparing a captured template against a single previously stored template to verify the identity of a person. Alternatively the identification process compares a captured template to many stored templates to identify a person.

Templates may be stored locally on the sensor or downloaded to it from a remote database or from the contact smartcard or RFID card.

The contact smartcard reader is compliant to ISO7816-1,2,3,4, supports T=0 and T=1 protocols and Synchronous and Asynchronous mode. The reader is based on industry standards, including PC/SC, EMV, FINREAD and Common Criteria to address a wide range of applications across government, enterprise and financial sectors.

The core chipset used in the Smart Card Reader is compliant with all crucial existing and emerging banking and IT standards and certifications. This means that the Smart Card Reader is ready for certification to Microsoft WHQL, EMV Level 1, Mondex, Entrust, and American Express.

The HF RFID reader provides the ability to read and write to a wide variety of transponders at 13.56 MHz including ISO 15693, ICODE (I & II) and the complete Mifare family of ISO14443 (A&B). Flash upgradeability of the RFID reader firmware provides future proofing of the reader. A Security Access Module (SAM) may be fitted to provide additional security features.

Communication via the MC70 USB port is maintained enabling ActiveSync of the MC70 with a host device.



<b>Fingerprint Sensor</b>	
Acquisition rate	15 frames/second
Identification time (1:100)	1s typical
Enrolment time	5s typical
Verification time (1:1)	0.5s typical
Acquisition rate	15 frames/second
False Rejection Rate (FRR)	Adjustable
False Acceptance Rate (FAR)	Adjustable
Sensor resolution	508dpi
Pixel array	256 x 360 pixels
Sensor area	12.8 x 18.0 mm
ESD protection	IEC 61000-4-2 Level 4 ±12kV
Image size	Approximately 100kbyte
Template size	100 to 540 bytes, typically 250byte
<b>Smartcard Reader</b>	
Compliance	ISO7816-1,2,3,4 T=0, T=1 Protocol Synchronous and Asynchronous mode
Connector	Meets ISO 7816-2, rated for >100 000 insertions
<b>RFID Reader</b>	
RF Transmit Frequency	13.56MHz
Supported RFID Standards	ISO14443A, ISO14443B, ISO 15693, ISO 18000-3, ICODE

Technology Solutions (UK) Limited reserves the right to change its products, specifications and services at any time without notice. Technology Solutions (UK) Limited provides customer assistance in various technical areas, but does not have full access to data concerning the uses and applications of any customers products. Therefore, Technology Solutions (UK) Limited assumes no responsibility for customer product design or for infringement of patents and/or the rights of third parties, which may result from assistance provided by Technology Solutions (UK) Limited.



Supported Tag-ICs	<p>Tag-it HF-I          Tag-it HF-I Light S          Philips ICODE SL2          Infineon ISO15693          MIFARE® Standard          MIFARE® 4k          MIFARE® Pro          MIFARE® Ultralight          MIFARE® DESFIRE          MIFARE® SmartMX          SLE 55Rxx          SRF55VxxP +S          SLE 66CL160S          SLE 66CLX320P          SR176          SRIX4K          LRI 12          LRI 64          LRI 512          EM4135          KSW Temp Sense          Sharp S          ASK GTML          ASK GTML2ISO          TOSMART P064          Jewel Tag (IRT0302B11 KSW)          ISO14443A Tags          ISO14443B Tags          ISO15693 Tags</p>
Reading distance	Up to 5cm (2") using ISO7810 size credit card format transponders.
SAM clock	3.39MHz
SAM VCC	5V
SAM type	Form factor compatible with GSM SIM footprint

Technology Solutions (UK) Limited reserves the right to change its products, specifications and services at any time without notice. Technology Solutions (UK) Limited provides customer assistance in various technical areas, but does not have full access to data concerning the uses and applications of any customers products. Therefore, Technology Solutions (UK) Limited assumes no responsibility for customer product design or for infringement of patents and/or the rights of third parties, which may result from assistance provided by Technology Solutions (UK) Limited.



<b>Connection Interfaces</b>	
Physical interface	Serial and power in to charge MC70
Reader power supply	Powered from host terminal
ActiveSync	via USB
<b>Physical Characteristics</b>	
Dimensions	90x82x32mm (3.54"x3.23"x1.26")
Weight	95g (3.35 oz)
Enclosure material	Lexan EXL Polycarbonate
Colour	Grey
Material finish	Sparked surface
Mechanical attachment	Snap-on action with optional locking screws
Docking	Attachment maintains dockability with Symbol docking cradle for charging and ActiveSync
<b>Environmental</b>	
Operating Temperature	-10°C to +50°C (14°F to 122°F)
Storage Temperature	-40°C to +60°C (-40°F to 140°F)
Humidity	Up to 90% Relative humidity Non Condensing
Drop specification	1.3m (4.26ft) to concrete, 6 drops per 6 sides over operating temperature; 1.5m (5ft) to concrete, 2 drops per 6 sides at ambient temperature 23°C (73°F)
Sealing	Internal components conformal coated
Electrostatic discharge	+/-12kV air discharge, +/-8kV direct discharge
Construction	RoHS compliant
<b>Regulatory</b>	
EMI/RFI	EN 300 330, EN 301 489, CE marked

Technology Solutions (UK) Limited reserves the right to change its products, specifications and services at any time without notice. Technology Solutions (UK) Limited provides customer assistance in various technical areas, but does not have full access to data concerning the uses and applications of any customers products. Therefore, Technology Solutions (UK) Limited assumes no responsibility for customer product design or for infringement of patents and/or the rights of third parties, which may result from assistance provided by Technology Solutions (UK) Limited.



	USA - FCC Part 15
Electrical Safety	Europe - EN60950-1
	USA - UL60950

Technology Solutions (UK) Limited reserves the right to change its products, specifications and services at any time without notice.  
Technology Solutions (UK) Limited provides customer assistance in various technical areas, but does not have full access to data concerning the uses and applications of any customers products. Therefore, Technology Solutions (UK) Limited assumes no responsibility for customer product design or for infringement of patents and/or the rights of third parties, which may result from assistance provided by Technology Solutions (UK) Limited.