Technology Solutions (UK) Ltd

Optical Fingerprint Sensor, Contact and Contactless Smart Card Reader

1084 Biometric Tri Scan Reader for Motorola MC70/75/75A

MOTOROLA SOLUTIONS Validated

An All In One Solution

The Biometric Tri Scan reader combines Contact Smart Card, Contactless Smart Card and Biometric Fingerprint Capture. The biometric core uses a rugged, high resolution (500dpi) optical fingerprint sensor.

The Tri Scan reader is compatible with most contact and contactless Smart Cards including all Mifare and iClass contactless cards. The contactless card reader is hardware compatible with the CAC, TWIC, FRAC cards as well as ICAO ePassports

The Tri Scan reader attaches as a snap-on unit to the base of the terminal - the mechanical design of the module enables the attachment to remain compatible with existing MC70/75/75A accessories such as the desktop charge cradle and car charger. The module may be quickly removed from the MC70/75/75A, or semi-permanently attached with two screws.

Rugged and Reliable

The fingerprint reader sensor provides a rugged, reliable solution even in dusty or damp environments. The sealed sensor with toughened platen provides immunity to Electro Static Discharge and protection from scratching and mechanical damage, with the ability to withstand everyday wear and tear (rated to 1 million touches minimum). The reader conforms to the FIPS 201 specification for Single Finger Capture Devices

The Tri Scan reader is supported by demonstration software and a Software Development Kit (SDK). The SDK is required for application development and provides the means to capture finger images. The fingerprint reader directly supports template extraction and matching in ANSI INCITS 378-2004, MINEX A, ISO/IEC 19794-2 and SAGEM proprietary formats. Templates may be stored on a remote database, on a contact or contactless smartcard or locally on the reader and used for 1:1 and 1:N verification.

Features:

Optical Fingerprint Sensor
High resolution (500dpi) optical sensor, conforming to the FIPS 201 specification for Single Finger Capture Devices

Contact Smartcard Reader
Compliant to ISO7816-1,2,3,4, and supports T=0 and T=1 protocols and 2-wire and 3-wire modes. The reader is based on industry standards, including PC/SC and EMV 2000 Level 1 to address a wide range of applications across government, enterprise and financial sectors

Contactless Smartcard Reader
Provides the ability to read and write to a wide variety of transponders at 13.56 MHz compliant to ISO14443A, ISO14443B, ISO 15693 and HID iClass

Communication
Communication is via the MC70/75/75A USB port which is automatically switched to allow ActiveSync of the terminal with a host device.

TSL 1084-03 Specifications

Physical Characteristics

Dimensions (max):	90(h) × 82(w) × 36(d) mm (3.54" x 3.23" x 1.42")
Weight:	110g (3.9 oz)
Enclosure material:	GE Lexan Polycarbonate
Colour:	Grey
Material finish:	Sparked surface
Mechanical attachment:	Snap-on action with optional locking screws
Docking:	Attachment maintains dockability with Motorola docking cradle for charging and ActiveSync

Fingerprint Sensor

Sensor resolution:	500dpi
Identification time (1:500):	1s typical
Authentication time (1:1):	0.9s typical
False Acceptance Rate (FAR):	Adjustable down to 10^{-8}
Pixel array:	256 x 400 pixels
Sensor area:	14 x 22 mm
ESD protection:	IEC 61000-4-2 Level 4 ±15kV
Raw image size:	Approximately 100kbyte
Template size:	Algorithm dependent – typically 100-400 bytes
Local storage capacity:	500 users, 1000 templates

Contact Smartcard Reader

Compliance:	ISO7816-1,2,3,4 PC/SC, EMV2000 Level 1 capable. T=0, T=1 Protocol. I2C
Connector:	Meets ISO 7816-2, rated for >100 000 insertions.
Card size:	Full (ID-1)
Card support:	Up to 420Kbps card interface, clock frequency up to 8MHz, 5V, 3V, 1.8V smart cards.

Contactless Smartcard Reader

RF Transmit Frequency :	13.56MHz
Supported RFID Standards :	ISO14443A, ISO14443B, ISO 15693
Supported contactless cards:	ISO15693 ISO14443A/B Philips: MIFARE®, DESFire®, MIFARE ProX®, SMART MX, and iCode® HID: iCLASS®
Reading distance:	Intended for in-slot card reading, capable of reading up to 2.5cm (1") from back surface dependent on transponder type.

Connection Interfaces

Charging of host terminal:	Host terminal charged through the reader
Reader power supply:	Powered from host terminal
ActiveSync:	via USB, automatically switched when connected to a PC

Environmental

Operating Temp.:	-10°C to +50°C (14°F to 122°F)
Storage Temp.:	-40°C to +60°C (-40°F to 140°F)
Humidity:	Up to 90% Relative humidity Non Condensing
Drop Spec:	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 23ºC (73ºF)
Sealing:	Internal components conformal coated
Electrostatic Discharge (ESD):	+/-15kV air discharge, +/-8kV direct discharge
Construction:	RoHS compliant

Regulatory

Electrical Safety:	IEC 60950-1:2005 Second Edition (National and group differences in accordance with CB Bulletin dated 2010-01-29) UL 60950-1 Second Edition CAN/CSA-C22.2 No. 60950-1-07
EMI/RFI:	EN 301 489-3 V1.4.1 EN 302 291-2 V1.1.1 FCC Rule Part 15, Subpart B – Unintentional Radiators, Class B limits FCC Rule Part 15.225

Part Numbers

1084-03-S0-TSR	Optical Finger Sensor Tri Scan Reader

Warranty

The TSL 1084 reader is warranted against defects in workmanship and materials for a period of one year (12 months) from date of shipment, provided the product remains unmodified and is operated under normal and proper conditions.

About TSL

TSL designs and manufactures both standard and custom embedded, snap on and standalone peripherals for handheld computer terminals. Embedded technologies include:

RFID - Low Frequency, High Frequency & UHF
Bluetooth
Contact Smartcard
Fingerprint Biometrics
1D and 2D Barcode Scanning
Magnetic Card Readers
OCR-B and ePassport

Utilizing class leading Industrial design, TSL develops products from concept through to high volume manufacture for Blue Chip companies around the world. Using the above technologies TSL develops innovative products in a timely and cost effective manner for a broad range of handheld devices.

Contact TSL

Telephone:	+44 (0)1509 238248
Fax:	+44 (0)1509 220020
	Technology Solutions (UK) Limited, Suite C, Loughborough Technology Centre, Epinal Way, Loughborough, Leicestershire, LE11 3GE. United Kingdom.
Email:	enquiries@tsl.uk.com

Technology Solutions (UK) Ltd