

# Multi-ISO Reader Technology

## 13.56 MHz Contactless Reader Board Modules for Cashless Payment Applications

- ▶ **Interoperable** – Supports the largest portfolio of secure contactless cards in the marketplace
- ▶ **Fast and Easy** – Up to 848 kBit/s data transfer speed and optimized data throughput between card and host
- ▶ **Security** – Integrated SAM support maximizes security between card, reader and host
- ▶ **Flexibility** – Single integration enables PC connected, embedded and mobile solutions
- ▶ **Simplicity** – Supports major tag IC features already implemented allowing for easy system integration
- ▶ **Connectivity** – Integration with OS independent interfacing concept



### **SECURE** contactless.

The family of 13.56 MHz Multi-ISO Reader Boards supports one of the broadest ranges of transmission protocols and transponder ICs available on the market. Designed to meet the requirements of both secure personal identity verification and supply chain management applications, the Multi-ISO Reader Boards are ideal for access control, as well as Automatic Fare Collection (AFC), ticketing, vending and mobile solutions.

Featuring integrated SAM support that enables state-of-the-art security, the highly interoperable reader boards support a wide range of industry standards, including ISO 14443 A/B, ISO 15693, ISO 18000-3 and EPC, allowing the reader to be easily used for public transport, financial transaction and many other applications. The reader board is also optimized for maximum data throughput times on both the air and serial interface, and is available with a variety of antenna size options for easy integration in virtually any mobile or compact application.

- ▶ Easy to integrate with full feature support of most transponder ICs
- ▶ Supports contactless payment (MasterCard® PayPass™ and Visa® payWave) and is NFC-ready
- ▶ Full access to data of contactless memory, high security and micro-controller-based cards
- ▶ Compact reader board and antenna design is ideal for virtually any size-constrained application
- ▶ Fast reading with up to 848 kBit/s data rate on air interface
- ▶ Future-proof through field upgradeable firmware
- ▶ Key management
- ▶ Enhanced anti-collision algorithm for multi-card handling
- ▶ Connectivity with the support of TTL, RS232, USB
- ▶ PC/SC driver for Windows® 2000/XP and Vista on USB interface

# Specifications

	Reader Core	Reader Board RS232	Reader Board USB
<b>Base Order Number<sup>1</sup></b>	0701800159-1	0701800160	0701800044-1
<b>RF Transmit Frequency</b>	13.56 MHz		
<b>Supported Standards</b>	ISO14443A, ISO14443B, ISO 15693, ISO 18000-3, NFC enabled, ICODE		
<b>Supported Tag-ICs</b>	MIFARE® Standard, MIFARE 4k, MIFARE Pro, MIFARE Ultralight, MIFARE DESFire®, MIFARE SmartMX, I-CODE SLI (SL2 ICS 20), I-CODE EPC (SL2 ICS 10), I-CODE UID, (SL2 ICS 11), I-CODE, NFC (Reader To Tag Mode) SLE 55Rxx, SRF55VxxP +S, SLE 66CL160S, SLE 66CLX320P, SR176, SR1X4K, LRI 64, LRI 512, EM4135, KSW Temp Sens® Tag-it™ HF-I Standard, Tag-it™ HF-I Pro, Jewel Tag, Sharp B, ASK GTMLASK GTML2ISO, TOSMART P032/P064, ISO 14443A Tags, ISO 14443B Tags, ISO 15693 Tags, ISO 18000-3 Tags, MasterCard PayPass and Visa payWave compliant tags		
<b>Host Communication</b>	Point-to-Point		
<b>Communications Interface</b>	CMOS-TTL	RS232	USB 2.0
<b>Communications Protocol</b>	Specific ASCII or Binary Protocol		
<b>Communications Parameter</b>	9600 Bit/s to 460 kBit/s, 8, N, 1	9600 Bit/s to 115 kBit/s, 8, N, 1	9600 Bit/s to 460 kBit/s, 8, N, 1
<b>Firmware Boot-Loader</b>	Supported via Serial Interface		
<b>S/W Driver</b>	Virtual COM port, API - DLL (MSVC++) @ USB version PC/SC driver for Microsoft Windows 2000/XP/Vista		
<b>Power Supply</b>	5 VDC ± 10% regulated		Via USB interface
<b>Power Consumption</b>	90 – 200 mA depending on antenna (without connected SAM) < 10 µA at power down mode	< 150 mA (without SAM) < 10 mA at power down mode	90 – 200mA depending on antenna (without connected SAM) < 10µA at power down mode
<b>Reading distance</b>	Up to 90 mm / 3.54", depending on tag and antenna	Up to 75 mm / 2.95", depending on tag	Up to 80 mm / 3.15", depending on tag
<b>RF Transmission Speed</b>	Up to 848 kBit/s		
<b>Antenna</b>	External	Integrated	
<b>Input/Output Connector</b>	2 status indicator LED lines SAM Interface	2 status indicator LED lines SAM Socket	
<b>Size</b>	25.5 x 30.0 x 4.8 mm ± (L/W) 0.5 (H) 1.0 / 1.00" x 1.18" x 0.19" ± (L/W) 0.02" (H) 0.04"	70.0 x 45.0 x 12.1 mm ± 1.0 mm / 2.76 x 1.77" x 0.48" ± 0.04"	117.0 x 67.0 x 15.0 mm ± 1.0 mm / 4.60" x 2.64" x 0.59" ± 0.04"
<b>Weight</b>	5g ± 5% / 0.01 lb ± 5%	17g ± 10% / 0.04 lb ± 10%	32g ± 10% / 0.07 lb ± 10%
<b>Operating Temperature</b>	-20°C to + 80°C / -4°F to +176°F		-20°C to +80°C / - 4F to + 176F
<b>Storage Temperature</b>	-40°C to + 85°C / -40°F to +185°F		
<b>Firmware Version</b>	1.2		
<b>Approvals/Compliances</b>	RoHS compliant, MasterCard PayPass enabled, Visa payWave enabled, EMVCo CL 1.1 ready	ETS 300-330, CE, FCC part 15, RoHS Compliant, ISO 14443 I-4, MasterCard PayPass enabled, Visa payWave enabled, EMVCo CL 1.1 ready	
<b>MTBF</b>	3.000.000 h	200.000h	

<sup>1</sup> The base order number can be extended with a dash and a number (e.g. "-1") to indicate a specific firmware revision.

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MKT-RF\_Multi-ISO\_RM\_DS\_EN



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