

# Universal Smartcard Module



## ***A Flexible Contactless Card Approach***

The Universal Smartcard Module (USM) is a high performance in-field re-programmable contactless smart card reader designed for use by system integrators in the public transport industry and other markets where performance and cost are important. A high speed ARM9 micro-controller controls all the major functions to provide a flexible development platform for developers while providing high data throughput.

The dual contactless interface supports the complete Customer Media family as defined by ITSO™ and includes MIFARE®, DESFire®, Jewel™, FeliCa® and Calypso®

Four integral ISO7816 compatible SAM slots are provided to allow the secure storage of encryption keys and to allow several schemes to co-exist on the same platform.

The module can be easily connected to a PC or other host systems using USB, TCP/IP or RS232 interface.

The module is equipped with an integrated real time clock (RTC) which is independently powered by a Lithium coin cell.

Applications:

- ❖ Ticket Vending Machines (TVM)
- ❖ Point of Service Terminals (POST)
- ❖ Platform Ticket Validators
- ❖ Transport Gates and Turnstiles
- ❖ Value Load Terminals (VLT)



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## Features

- ❖ Field upgradeable reader firmware
- ❖ Small form factor
- ❖ External dual ISO14443 antenna with LED's (x3) and buzzer
- ❖ Supports all Customer Media as defined by ITSO™
- ❖ NFC ready - FeliCa® compatible
- ❖ Multiple connections to external systems using USB2.0, RS232 (x2) or Ethernet (10/100Mbps)
- ❖ Contactless EMV ready

GIS can supply either full customisation or a software development platform for in-house development.  
Please contact GIS for further details.



## Technical Specification

- ❖ 32-bit ARM9 based single chip microcontroller with variable clock speed up to 180MHz
- ❖ 512KBytes internal Flash memory (program memory) / 32KBytes internal RAM
- ❖ 64MBytes of external DRAM (\*Optional 128MB)
- ❖ 256MBytes of external NAND Flash
- ❖ 8KBytes of non removable FeRAM memory
- ❖ 2GB of removable Flash memory using Transflash technology
- ❖ Real Time Clock with independent Lithium coin cell
- ❖ Keyboard interface (4 x 3 n/o switches)
- ❖ Host interface with USB 2.0 (host and slave), RS232 or 10/100Mbps Ethernet
- ❖ Dual Contactless Smartcard interface compatible with ISO14443-A/B and NFC
- ❖ Reading range up to 5cm
- ❖ Quad SAM: ISO7816 ID000 - 3V or 5V
- ❖ 14 Independent I/O signals
- ❖ Input voltage variable from 5.5Vdc to 32Vdc
- ❖ LCD module (x2) expansion
- ❖ Windows CE capable

### General Information

Weight: 200 gm

Dimensions: 130 x 85 mm

Operating Environment: -10°C to +60°C ambient, 10 to 90% relative humidity (non-condensing)

Transit and Storage: -20°C to +70°C ambient, 5 to 95% relative humidity (non-condensing)

### Standards and Approvals

CE: EN61000-6-1:2001, EN61000-6-3:2001, EN60950:2000, EN300 330-1 V1.3.1, EN300 330-2 V1.1.1, EN301 489-3



*Specifications are subject to change without notice - April 2010*

MIFARE is a trademark of NXP Semiconductors

FeliCa is the contactless IC card technology developed by Sony Corporation



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