Operation Manual

BSM2-100 / 0533A03C-001 with 0001A04C and 0505A01A

REVISION 1.0, 2006-11-17

The BSM2-100 is a RFID Read-/Write-Device (short: reader) which is compatible to all mifare® contactless smartcards. It provides a serial interface RS232 to output or exchange data with a host computer and a 13.56MHz inductive interface to provide power to and exchange data with the Mifare/ISO compliant card (or other available form-factors such as tags, key-fobs).

Mounting and Connection

The reader generates a magnetic field with the frequency of 13.56MHz which is influenced by any electrically conductive material in close proximity to the device. When mounting the antenna, a distance to any such material of minimum 10 cm is required to ensure that there will be no significant degradation of the performance in terms of read range and reliability. Mounting the antenna directly to metal would result in a severe reduction of read range down to zero functionality. Care should be taken when testing the device after mounting at a problematic environment: Read ranges and performance vary from card to card and very much between card and Tag's or key-fob.

When mounting multiple readers, the distance between readers should be minimum 1 m to avoid degradation of performance due to interference between the antennas.

To connect the device to a host computer, any serial RS232-interface (COM-port) can be used. There is a special cable required to connect to the AMP MicroMatch 20-Pole connector which provides the communication and power supply connections.

Operation

When the device is connected to a proper power supply, it will perform some initialization routines and is then under control of the host system. The host software can initiate card scan cycles and, after a card has been detected, perform read and write operations to the card memory.

Technical Data

DC Electrical Characteristics

Symbol	Parameter	Condition	Min	Typ	Max	Units
Vdd	Supply Voltage		4.75	5	5.5	VDC
Idd	Supply current				450	mA
Idd1	Peak Supply current	Inrush			650	mA

Power supply voltage to be measured at BSM2-100 connector (NOT including voltage drop over connection cable).
Additional requirements for the supply voltage: Vripple = 50mVpp max.

RF Characteristics

Operating frequency: 13.56 MHz
Data transmission modulation reader to card: AM 100%
Data transmission modulation card to reader: AM/load modulation

Pinout 20-Pin AMP MicroMatch Connector BSM2-100<->Host

Pin	Name	Type	Description
1,2	PWR	Power	5V Power Supply
3,4, 20	GND	Power	Signal and Power Ground
5	TXD	Output	RS232-data from reader
6	RXD	Input	RS232-data to reader
7-19	-	-	Not connected

6-Pin AMP MicroMatch Connector Module 0533A03C-001 <-> 0001A04C

To be connected 1:1 with a flatband ribbon cable AWG26-28, length 30cm (1').

Serial Interface

The TXD/RXD signals are compatible with RS-232 level signals. The interface operates at 19200 baud, no parity, 8 data bits, 1 stop bit. The communication protocol used is the T3964R protocol.

Temperature

Operating temperature range: 0…35°C
Storage temperature range: -20…+60°C
Thermal shock: 30°C/min maximum dT/dt

Humidity

Operating: 20% to 80% relative humidity; non condensing
Non-operating: 10% to 90% relative humidity; non-condensing

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The final product should contain labelling according to FCC requirements.
For example:
This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This device contains FCC ID OKY1053300101A03C. This label will be placed on the final product, clearly visible to all persons exposed to the transmitter

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