Users Manual MicroBadge 4053

MICRON COMMUNICATIONS, INC.
3176 South Denver Way; Boise, Idaho 83707-0006

MicroBadge 4053 Users Manual

NOTE:

- *This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of the equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.*

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1

MicroBadge 4053 Reader

Description

The MicroBadge 4053 RFID reader is a self-contained low frequency reader for powering and interrogating passive RFID transponders. The reader is configured to interface with other electronic devices via an RS-232 or RS-485 connection.

The 4053 reader emits a low frequency magnetic field, which will provide enough energy to power a transponder within the read range of the transponder. The transponder will send a unique identification, which the reader detects. If the identification code is valid and the internal error detection determines that there are no errors in the data received, an audible tone is emitted, the red LED on the front of the reader turns to green, and the code is sent to the RS232 or RS484 port of the reader.

Section

2

Installation Instructions

The reader should be mounted near the location that is desired to be monitored. Before final installation of the reader, test the system with tags at range and orientation typical of system operation. Typically, the read range for a credit card size transponder is approximately 8 inches, and an 18mm button transponder has a read range of 5 inches. Caution should be taken that the reader is not mounted within 12 inches of metallic objects, because of possible performance degradation of the system.

Once a suitable location is determined, position the reader to allow the transponder to be presented nearly parallel to the face of the reader. This allows for the greatest read range for the entire system.

After the reader is mounted, the 12 VDC (nominally) power transformer should be plugged into a 110 volt, 50 – 60 Hz socket, and the power plug from transformer should be plugged into the reader power jack. The LED indicator on the front of the reader should be glowing with a RED color.

Next, plug an RS232 cable with a nine–pin connector into the RS232 port of the reader, and connect the other end of the cable into the serial port of a computer.

To test the functionality of the reader, start up a terminal program in the computer. (PROCOM or Windows terminal program will work fine.) Set the communications parameters to 19,2000 baud, no parity, eight data bits, and one stop bit. Make certain that the port selected in the terminal port corresponds to the port that the RS232 cable is connected.

Next, present a transponder to the reader at approximately 4 inches and parallel to the face of the reader. An audible "beep" should be heard, and the LED should alternately flash RED and GREEN. Moreover, you should see a string of 18 digits displayed on the computer monitor. These digits correspond to the identification code stored in the transponder.

If an audible "beep" is head, but the computer does not display the 18 digits on the monitor, verify that the proper port is selected, and that the proper communications parameters are set.

If an audible “beep” is not heard, verify that the LED is glowing RED, which indicates that power is being supplied to the reader. Try another transponder, and bring it closer to the reader antenna. If this fails to produce a sound, disconnect the unit from the computer and from power and call the factory.

Section

3

Operating Limitations

Storage Temperature	-55	90	Degrees C
Operating Temperature	-40	70	Degrees C
Operating Frequency	123	127	KHz
Read Range	0	50	cm
Power Consumption		1.5	Watts
Power Supply Voltage	9.0	15.0	VDC

Section

4

Maintenance

There are no user repairable components within the reader, and any maintenance performed on the reader should be performed only by factory trained personnel.