BEWATOR COTAG

Federal Communications Commission
Equipment Authorization Division
Application Processing Branch,
7435 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

Date: 8th August 2000

**Form 731 Confirmation No EA98396**

FCC ID: EZO5PQ SM500: Contactless Smartcard Reader

Dear Sir/ Madam

I hereby apply for Certification for the above SM500 Contactless Smartcard Reader under Part 15 of the FCC Rules and present the following documentation for your attention:

1. Introduction and outline drawing
2. Description of device, labels, and circuit block diagram
3. Test Report from dB Technology No R1238
4. Items List
5. Installation notes

If you have any problem with this submission please contact me, Martin Young at Bewator-Cotag, Cambridge, England
**Fax:** 44-1223-366799
e-mail address: myoung@cotag.com

yours faithfully,

Martin J D Young Quality & Approvals Engineer

The SM500 series Contactless Smartcard Reader

**Bewator Cotag**
**A DIVISION OF BEWATOR GROUP LIMITED**
**Mercers Row,**
**Cambridge, CB5 8EX UK**
**Tel: 01223 472300**
**Fax: 01223 366799**

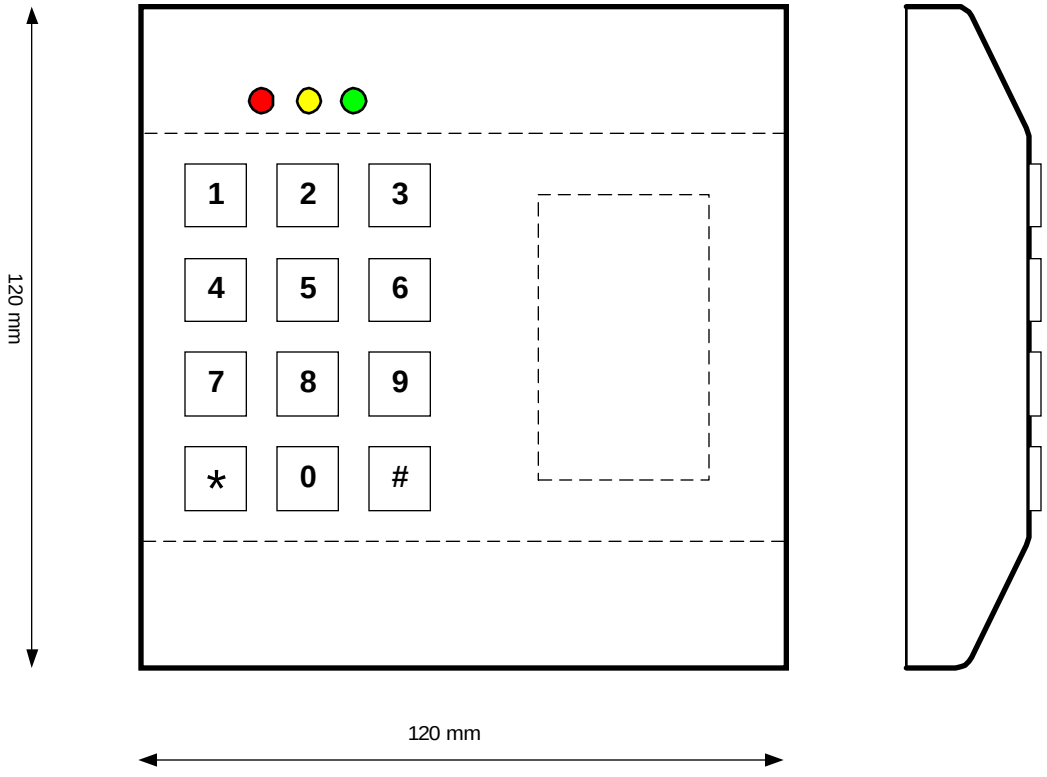
Introduction:

The Contactless Smartcard reader is designed to read codes contained in "Mifare" smartcards and to pass these codes to a host system.
The SM500 reader provides a choice of Wiegand, Mag Stripe or BC link data output, selected by jumper.
The reader consists of a printed circuit assembly, with or without a keypad, mounted inside a plastic enclosure. Power supply: 10 to 24v DC. 100mA.

**SM500 SERIES CONTACTLESS SMARTCARD READER**

SM501K has integrated keyboard (see drawing below)

SM501 has same dimensions but without keyboard

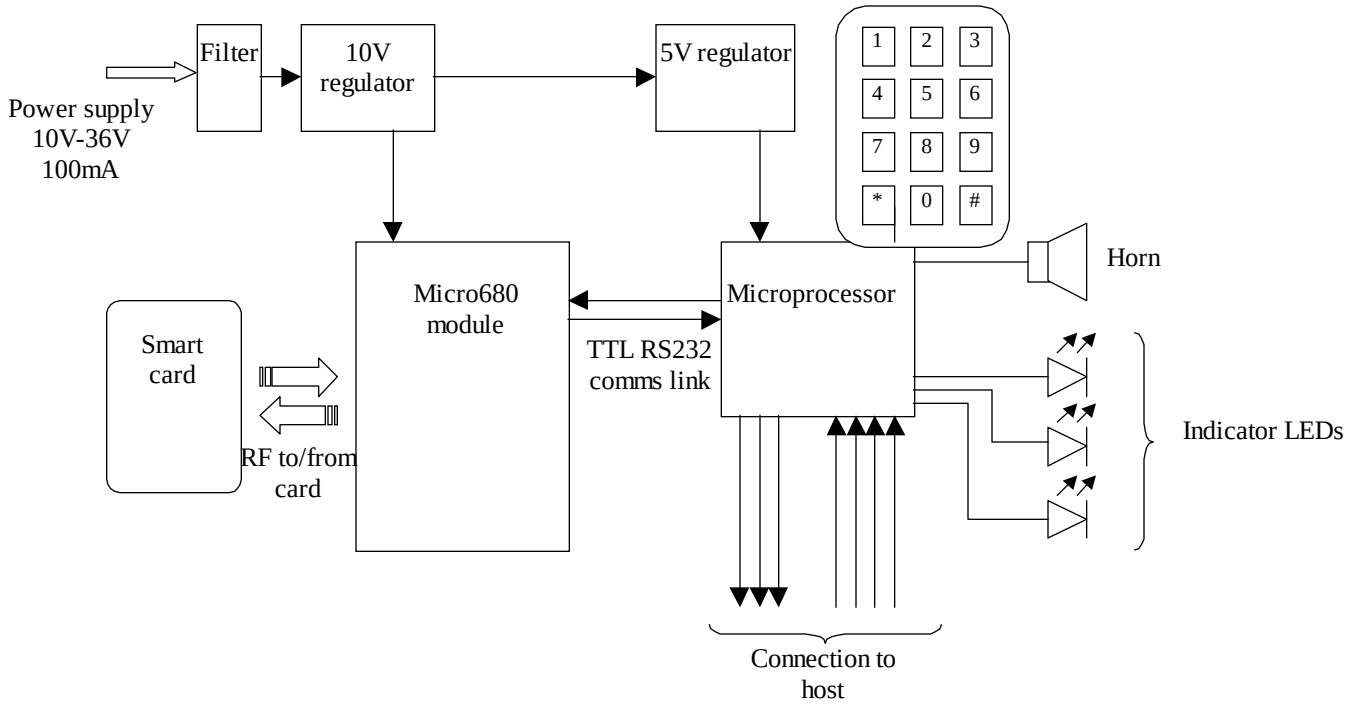


## Functional Description of operation of SM500 series Smartcard readers

The smartcard reader consists of two parts; namely the Gemplus Micro680 smartcard reader module that carries out secure RF transactions with a Smartcard and an interface and power supply PCA which takes the data read from the card and converts it into a suitable form to be output via three open drain outputs.

The host system then makes a judgement as to the validity of the card using the data supplied from the reader and pinpad and indicates the result by asserting one or more of the four inputs to the reader, the reader then reflects the state of these inputs on the three LEDs and the horn.

**Block diagram**




Power Supply:

JU1 is used to select upper or lower voltage ranges, nominally 10 to 35 V dc and 4 to 15.6 V dc. The output voltage has been chosen to be 13.8 V, which is as high as possible within the tolerance limits, in order to reduce the heatsink requirements on reg 2.

Transmitter:

The 13.56MHz is derived from the Xtal. The Mifare smartcard divides this by 16 to give the card output frequency of 847kHz.

FCC Labelling:

1. The FCC disclaimer label is featured in the Installation Note attached, since the reader is not sufficiently large to display the label itself.

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.

2. Identification label on the back of the reader:

FCC ID: EZO5PQ SM500
BEWATOR COTAG
CAMBRIDGE UK

CE ETS 300-330
WT LICENCE EXEMPT

| | |
|---|---|
| Model No SM501K<br>Type SM500 Reader<br>Serial No XXXX | VOLTS 10 to 36<br>AC - DC : DC<br>Amps: 100mA |