# High Frequency
## Dual technology 13.56 MHz Scan Module

**id SYSTEMS**
**www.idsys.co.uk**

**The dual technology Scan Module combines a high performance laser scan engine supporting industry standard bar code symbologies, with a class-leading RFID engine for 13.56MHz tags and smart labels from Microchip, Texas Instruments (Tag-it), Philips Semiconductors (I.CODE), OMRON (V720) and Gemplus (FOLIO).**

The Module is suitable for integration within a wide range of products that require the ability to read bar codes, whilst also reading and writing RFID tags. It is physically and (where possible) electrically compatible with industry standard bar code scan engines manufactured by Symbol and PSC, and can thus be used as a direct replacement by OEMs and system integrators who wish to enable existing products with a dual capability.

Each Scan Module integrates a powerful micro controller and RFID engine, which provide all the intelligence required for reading from and writing to tags and smart labels, together with an antenna that provides exceptional range for its size. Communication with a Module is achieved through a powerful serial protocol, which supports configuration, status and data interchange with a host. The latter may, for example, be a hand-held computer, Point of Sale terminal, medical equipment, vending machine or robotic equipment.
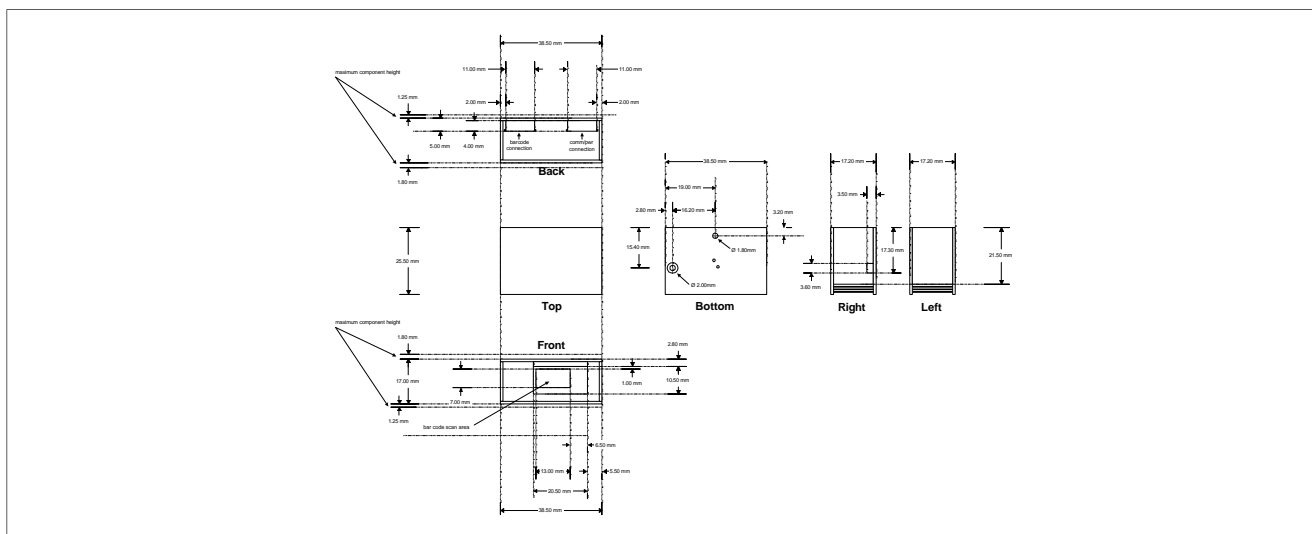
## Product Features

- read/write leading 13.56MHz tags and smart labels available from Gemplus (FOLIO), Microchip (series 300), OMRON (V720), Philips Semiconductors (I.CODE) and Texas Instruments (Tag-it)

- integrated SE-923 scan engine (oem-186 only) supports leading bar code symbologies

- physically compatible with industry standard bar code scan engines (i.e. Symbol SE-1200 and PSC LM500)

- secure download facility allows new firmware to be loaded in situ

- simple electrical interface to a host, with single supply operation (+5V)

- low power modes (including power on/off control) for optimum battery life

- bi-directional TTL serial interface supports Scan Module configuration, and transfer of tag read/write data

## Developer's Kit

A Developer's Kit is available to support rapid integration of a dual technology Scan Module within new or existing products. Each kit contains: a dual technology Scan Module; connector/ serial level conversion PCB; API software libraries for MS-DOS™ and Windows™; Tag Application Notes (which include tag read/write programming examples); serial communication protocol description; test software; and sample tags/smart labels. In addition, API source libraries can be made available for partners who wish to integrate a Scan Module within a non MS-DOS™/ Windows™ host.

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## Technical Specifications

| Hardware Specifications | | |
|---|---|---|
| Processor | Type | Motorola MC68HC908GP32 |
| | Memory | 32K bytes of flash program memory; 512 bytes of RAM |
| | Upgradeable | Supports firmware downloads via the serial port |
| Communication Interface | Protocol | Serial, proprietary packet based with CRC; 9,600 baud |
| | Structure | 8 data bits, 1 stop bit, no parity |
| | Signal | Bi-directional TTL |
| External Interface | Connector | 12-way ZIF |
| Power Supply | Input voltage | +5V ± 0.2V DC, less than 50mV noise and ripple |
| | Input current | 170mA |
| | Start up | Soft start circuit |
| Operating Current | Off | 40µA |
| | On | 50mA (typical); 130mA (bar code scan); 170mA (tag read/write) |
| Mechanical | Dimensions | (L) 38.00 x (W) 26.00 x (D) 17.00 mm |
| | Weight | 17g |
| Antenna | Impedance | 50 Ohms |
| | Style | PCB and wire design |
| | Dimensions | 37.00 x 17.00 mm |
| RF Power | Output | 130mW (typical) |
| Range | Read | I.CODE (45 x 90), 65mm; Tag-it (45 x 90), 60mm; Microchip S300 (45 x 45), 50mm |
| | Write | I.CODE (45 x 90), 65mm; Tag-it (45 x 90), 45mm |

| Product Type | Order Code | Description / Tags Supported |
|---|---|---|
| Dual technology Module | oem-186 | High Frequency tags from: **Microchip** (series 300), **Philips Semiconductors** (I.CODE), **Texas Instruments** (Tag-it). Common bar code symbologies: UPC/EAN, Code 39, Code 93, Interleaved 2 of 5, Discrete 2 of 5, USS-128, Codabar, MSI, UCC/EAN 128, ISBT-128, TriOptic Code 39 |
| | oem-187 | High Frequency tags from: **Microchip** (series 300), **Philips Semiconductors** (I.CODE), **Texas Instruments** (Tag-it). |
| Developer's Kits | edp-225 | Includes: High Frequency dual technology Scan Module (oem-186); Converter PCB and inter-connection cable; MS-DOS™ and Windows™ API libraries; MS-DOS™ and Windows™ test software; Tag Application Notes; serial protocol description; sample tags and documentation |



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