MS-1

Scan Engine

Compact Shape/Size

ACTUAL SIZE SHOWN
Height: 0.45" (11.5 mm)
Width: 1.26" (32 mm)
Length: 0.94" (24 mm)

The MS-1 is one of the smallest and lightest fully decoded scan engines in its class. Featuring small size and reliable performance with minimal budget impact, it offers embedded power management, a bi-directional serial link for dynamic configuration, and both a low and high density version.

The MS-1 is the ideal scan engine for OEM design engineers seeking a dependable and inexpensive embedded bar code scanning solution.

MS-1: At a Glance

- *Scans/second: up to 220*
- *Read Range: 1.0 to 13.0" (25 to 330 mm)*
- *Low 5V Power Draw*

ESP® Easy Setup Program: Single-point software provides quick and easy setup and configuration of all Microscan readers.

For more information, visit www.smallscanners.com.

Compact & Lightweight
MS-1 has a footprint of 1.26" (32 mm) by 0.95" (24 mm), and is 0.44" (11 mm) tall. The engine weighs less than 0.3 ounces (8.4 g) for easy mounting onto robotic equipment or into tight spaces.

Reading Capabilities
The MS-1 engine can easily read the most difficult codes, and excels at reading on highly reflective surfaces.

Easy Setup
ESP software provides easy configuration of the MS-1, including selectable trigger and symbology setting.

Application Examples
- Kiosks
- Point-of-sale terminals
- Bank ATMs
- Robotics
- Clinical instruments

MS-1: Available Codes

Linear — All Standard

Stacked — GS1 Databar (RSS)

MICROSCAN®

1.04"
(26.4mm)

2X M1.6 x .35
threaded insert

.72"
(18.3mm)

.94"
(24mm)

HIGH DENSITY FIELDS OF VIEW

15 mil 1D
10 mil 1D
5 mil 1D

cm in.
Range

cm   10   5   0   5   10
in. 5   0   5

LOW DENSITY FIELDS OF VIEW

20 mil 1D

10 mil 1D

5 mil 1D

cm in.
Range

cm   10   5   0   5   10
in. 5   0   5

.63"
(16mm)

.18"
(4.6mm)

.45"
(11.5 mm)

1.26"
(32mm)
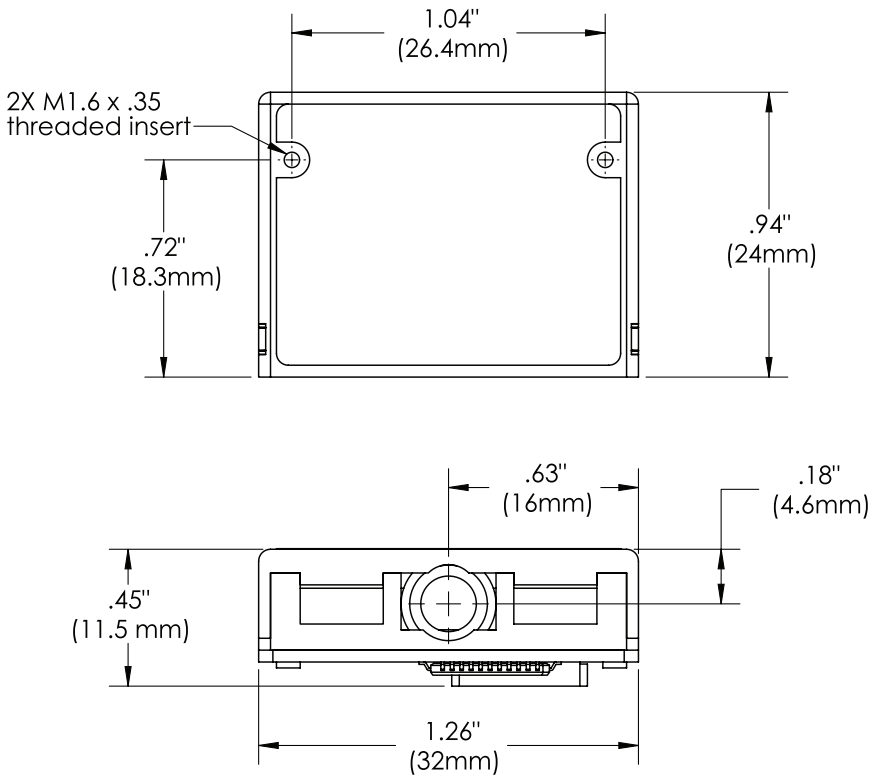
MECHANICAL
Height: 0.45" (11.5 mm)
Width: 1.26" (32 mm)
Length: 0.94" (24 mm)
Weight: .3 oz. (8.4 g)

DESIGN
Flash memory sensor:
CCD linear image sensor
Optics: 660 nm visible LED
Bright and sharp scanning line

SCANNING PERFORMANCE
Scan rate: 220 scans/sec
Min. X dimension: Down to 3.3 mil (.084 mm) on Code 39
Depth of field: 1.0 to 13" (25 to 330 mm)
Bar code width: Up to 7" (178 mm) on 20 mil (0.5 mm) resolution code

COMMUNICATION
Interface: RS-232 TTL

CONNECTOR
Type: 12-pin ZIF connector

SYMBOLOGIES
UPC (E&A), EAN, Code 39, Code 128, UCC EAN 128, Interleaved, Industrial and Standard 2 of 5, Codabar, Code 93, MSI, Plessey, GS1 Databar (RSS)

ENVIRONMENTAL CHARACTERISTICS
Operating temperature: -20 to 50° C (-4 to 122° F)
Storage temperature: -20 to 60° C (-4 to 140° F)
Relative humidity: 20% to 85% (non-condensing)
Ambient light: Works in any lighting conditions, from 0 to 70,000 lux
Shock: 2000G
Vibration: 50G r.m.s

HOST CONNECTOR/PIN ASSIGNMENTS
12-Pin ZIF Connector

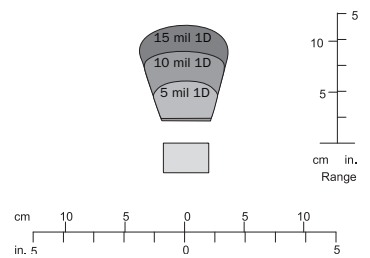| Pin No.	Decoded Operation	In/Out
1	+5 Power VCC	In
2	TTL_RXD	In
3	Trigger input	In
4	Power enable	In
5	TTL_TXD	Out
6	TTL_RTS	Out
7	Ground	
8	Firmward Upload 1	In
9	LED/Buzzer Output	Out
10	TTL_CTS	In
11	Firmware Upload 2	In
12	Reset	In

CE MARK
Immunity designed for:
EN 55-24:1998 ITE Immunity Standard
Radiated and conducted emissions designed for:
EN 55022:98 ITE disturbances class A
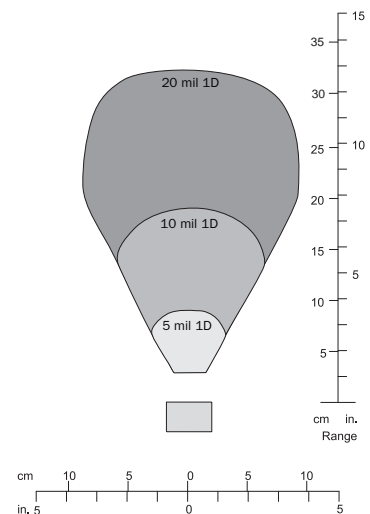
ELECTRICAL
Power: 5V +/−5%, 300 m/V p-p max ripple, 120 mA @ 5 VDC (typ.)
Start Up Time: 175 ms

WARNING
LED LIGHT
DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
CLASS 1M LED PRODUCT
Light Output: 648cd Wavelength: 464, 518, 635 nm
IEC 60825-1:1993+A1:1997+A2:2001

READ RANGES

Narrow-Bar	Read Range	Scan Width
HIGH DENSITY		
.005" (.127 mm)	1.1 to 2.3" (28 to 58 mm)	2.0" (51 mm) @ 1.9" (48 mm)
.010" (.254 mm)	1.0 to 3.5" (25 to 89 mm)	2.5" (64 mm) @ 3.1" (79 mm)
.015" (.38 mm)	1.0 to 4.5" (25 to mm)	3.0" (76 mm) @ 3.5" (89 mm)
LOW DENSITY		
.005" (.127 mm)	1.6 to 3.5" (41 to 89 mm)	2.4" (61 mm) @ 3" (76 mm)
.010" (.254 mm)	1.5 to 7.6" (35 to 193 mm)	4.2" (107 mm) @ 6" (152 mm)
.020" (.508 mm)	1.5 to 13" (35 to 330 mm)	7.0" (178 mm) @ 11" (279 mm)

SAFETY CERTIFICATIONS DESIGNED FOR
FCC, UL/cUL, CE

RoHS WEEE COMPLIANT

ANAB ACCREDITED

ISO 9001:2000
Certified QMS

ROHS/WEEE COMPLIANT

ISO CERTIFICATION
Issued by TüV USA Inc, Member of TüV NORD Group, Cert No. 06–1080

MICROSCAN®

Microscan Systems, Inc.
Tel 425 226 5700 / 800 251 7711
Fax 425 226 8250
Microscan Europe
Tel 31 172 423360 / Fax 31 172 423366
Microscan Asia Pacific R.O.
Tel 65 6846 1214 / Fax 65 6846 4641

Part of a full range of sales tools available from our website:

www.microscan.com
E-mail: info@microscan.com
Tech support: helpdesk@microscan.com