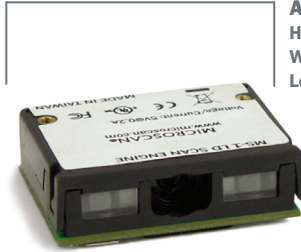


MS-1

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: 0.9 to 13.8" (23 to 351 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 cm) 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



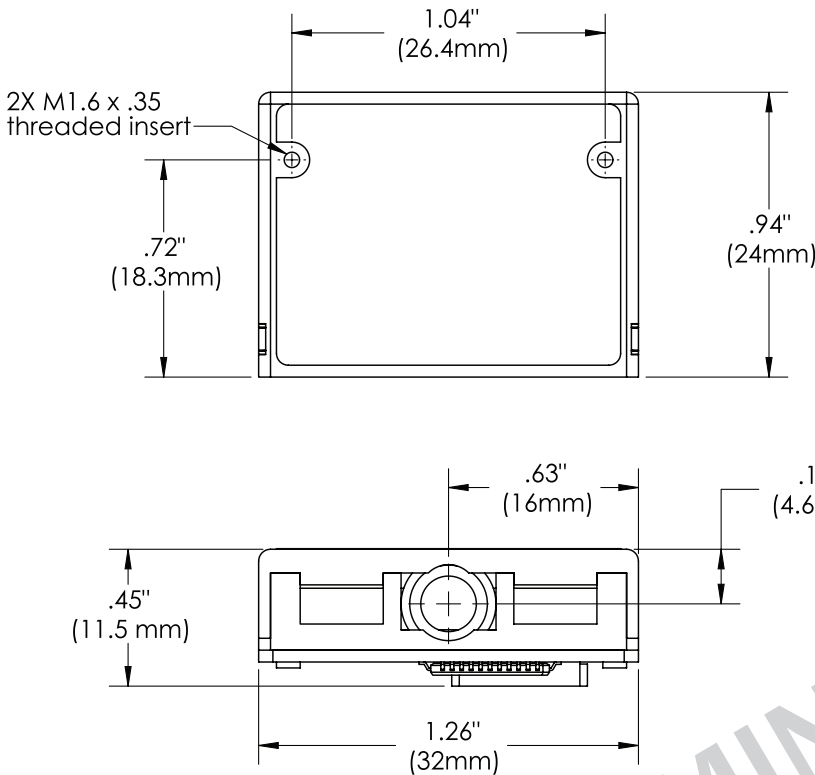
Stacked

GS1 Databar (RSS)

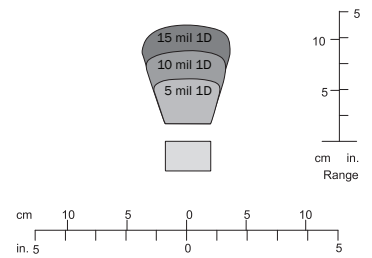


MICROSCAN®

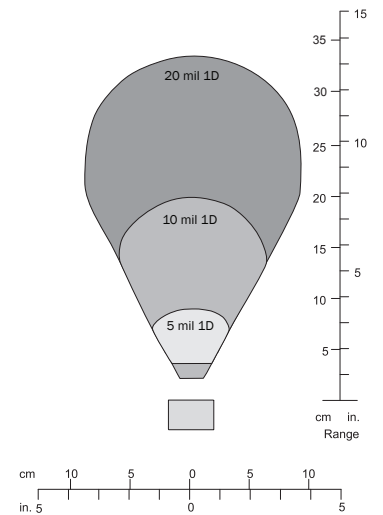
MS-1 SCAN ENGINE SPECIFICATIONS AND OPTIONS



HIGH DENSITY FIELDS OF VIEW



LOW DENSITY FIELDS OF VIEW



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 0.05 mm (2mil) on Code 39
Depth of field: 0 to 351 mm (13.8")
Bar code width: Up to 114 mm (4.5") on 0.25 mm (10 mil) 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: 0 to 50° C (32 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

HOST CONNECTOR/PIN ASSIGNMENTS 12-Pin ZIF Connector

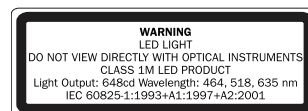
Pin No.	Decoded Operation	In/Out
1	+5 Power VCC	In
2	TTL_RXD	In
3	Trigger input	In
4	Power enable	In
5	TTL_TXD	Out
6	TTL_RTS	Out
7	Ground	
8	Firmware Upload 1	In
9	LED/Buzzer Output	Out
10	TTL_CTS	In
11	Firmware Upload 2	In
12	Reset	In

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.)



READ RANGES

Narrow-Bar	Read Range	Scan Width
HIGH DENSITY		
.005" (.127 mm)	.9 to 2.3" (23 to 58 mm)	2.1" (53 mm) @ 1.9" (48 mm)
.010" (.254 mm)	.9 to 3.5" (23 to 89 mm)	2.7" (69 mm) @ 3.1" (79 mm)
.015" (.38 mm)	1.2 to 4.5" (30 to 114 mm)	3.2" (81 mm) @ 3.5" (89 mm)
LOW DENSITY		
.005" (.127 mm)	1.5 to 3.5" (35 to 89 mm)	2.7" (69 mm) @ 3" (76 mm)
.010" (.254 mm)	1.8 to 7.6" (46 to 193 mm)	4.5" (114 mm) @ 6" (152 mm)
.020" (.508 mm)	3.0 to 13.8" (76 to 351 mm)	7.2" (138 mm) @ 11" (279 mm)

SAFETY CERTIFICATIONS DESIGNED FOR FCC, UL/cUL, CE



ISO 9001:2000
Certified QMS

ROHS/WEEE COMPLIANT

ISO CERTIFICATION

Issued by TÜV USA Inc, Member of TÜV NORD Group, Cert No. 06-1080

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 Read Range and other performance data is determined using high quality Grade A symbols per ISO/IEC 15415 and ISO/IEC 15416 in a 25°C environment. For application-specific Read Range results, testing should be performed with symbols used in the actual application. Microscan Applications Engineering is available to assist with evaluations. Results may vary depending on symbol quality. **Warranty**—One year limited warranty on parts and labor. Extended warranty available.

MICROSCAN®

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