MS85x ESD LINE
Barcode scanning for Static Sensitive Environments

S-USB

BLUETOOTH LE® V4.2
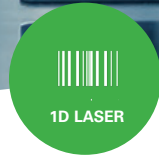
1D LASER

2D IMAGER

unitech ESD SAFE compliant barcode scanning line!

Introducing the new MS85x ESD (Electrostatic Discharger) series of high-performance 1D Laser and 2D Imager, USB corded and cordless (Bluetooth®). Unitech barcode scanners are specifically designed to satisfy the stringent requirements of static-safe environments such as: manufacturing (semi-conductor), gas station, fuel grounds, mining fields, clean-rooms and other situation that require electrostatic discharge control.

Featuring the latest 1D and 2D scanning technology, the MS85x ESD will provide impressive reading speeds and accuracy and can even read poorly printed or damaged barcodes. The wireless version supports Bluetooth® dual technology mode (Bluetooth® LE V4.2 and Bluetooth® 2.1+EDR, Class 1) that will deliver you freedom and business flexibility. Compatible with any smartphone, tablet, or computer, the MS852B+ ESD easily pairs to any mobile device or PC that allows the user to transmit data to the host from up to 100 meters from base.

What is ESD
Electrostatic discharge (ESD) is a rapid discharge of electric current between two objects with different charges and different numbers of electrons. This exchange of electrons causes a large build-up of electromagnetic fields, which results in ESD. Certain electronic devices are vulnerable to low voltage ESD and can be permanently damaged by voltage currents without adequate ESD protection.

ESD in data capturing
When selecting a barcode scanner, consideration should be made to ensure that the data capturing process does not present an additional risk in terms of ESD events. When using handheld barcode scanners, the barcode reader can build up a static charge - depending on whether it is used on a non-conductive surface. If the reader has built up charge itself and is brought close to a sensitive part, an ESD event can occur that can permanently damage sensitive goods. Protection against such damage can therefore save significant time and money in repairs or replacements. There are two types of ESD safe plastics for the barcode scanner to become ESD safe:

- External additive: When the anti-static agent has been applied to the surface of the product by brushing, spraying or dipping.
- Internally mixed: When the anti-static agent has been added to the plastic material mixed to be uniformly and evenly distributed throughout the polymer.

Unitech's MS85X ESD-safe scanner is made by via the internal antistatic agent mixture way to protect MS85X series to be ESD safe as this is far more durable than the surface simply being coated (as wear and tear over time will remove the protection).

The Unitech MS85x ESD line:
- available in **multiple ESD versions:** 1D, 2D, wired and Bluetooth version
- durable using **antistatic agent** in the material itself (not just the surface)
- can withstand ESD up to $10^5 \sim 10^9$ **ohms per square**
- officially **Tested and Certified** (ESD safe for scanner body, cradle and cable)
- offers **Long life time of ESD safe protection** without wear and tear
- comes standard with **5 years warranty**
- offers the **best price** for ESD safe standards in its class

5 YEAR WARRANTY

Available models:
- The **MS851 ESD (1D wired)** Reads most standard 1D barcodes and offers longer working range, a wider scan field, high-speed rate (up to 104 scans/sec) and sensitive scanning performance.

- The **MS851B ESD (1D Bluetooth)** Reads most standard 1D barcodes, offers a high-Speed data capture performance (up to 104 scans/sec), support Bluetooth® dual-mode technology with a battery life up to 30 hours per full battery charge and range up to 100m in the line of open sight.

- The **MS852+ HD ESD (2D High Density wired)** High-performance 2D imager 1280 x 800 laser aiming pattern. It can read special barcode symbologies such as OCR, DotCodes and Digimarc barcodes. Offers excellent motion tolerance design suitable to read bar code while moving.

- The **MS852B+ HD ESD (2D High Density Bluetooth)** High-performance 2D imager 1280 x 800 megapixel lase sensor that enhances the maximum compatibility. It can read special barcode symbologies such as OCR, DotCodes and Digimar. Support Bluetooth® dual-mode technology with a battery life up to 25 hours per full battery charge and range up to 100m in the line of open sight.

MS851 ESD
1D Laser / USB

1D LASER

S-USB

Physical characteristics
Sensor	1D Laser
Illumination	650 nm visible laser diode
Ambient light	-
Scan Rate	104 (± 12) scans/sec (bidirectional)
Angle Sensor	±40° Skew, ±65° Pitch,
Roll Angle	-
Optical Resolution	4mil (0.1mm)
Printing Contrast Scale	minimum 20%

Reading distance (DOF PCS=80%)*
* Depending on width, type and quality of barcode.

Symbology	Near (mm)	Far (mm)
Code 128, 5 mils	3.55 cm	17.78 cm
Code 39, 5 mils	3.05 cm	26.67 cm
Code 39, 7.5 mils	3.04 cm	41.91 cm
Code 128, 10 mils	3.05 cm	40.46 cm
UPC, 13 mils	4.57 cm	63.50 cm
Code 128, 15 mils	5.08 cm	66.04 cm
Code 39, 20 mils	3.56 cm	116.84 cm
Code 39, 55 mils	8.64 cm	177.80 cm
Code 39, 100 mils	60.96 cm	457.20 cm

Communication
Radio	-
Wireless Coverage	-
Interface/ Profile	-
Host Interface	USB: HID / SPP
Memory Buffer	-

Mechanical
Scanner Dimension	87.8 L x 71.6 W x 177.7 H (mm)
Scanner Weight	147g (without cable)
Trigger Switch Life	10 million times
Cradle Dimension	-

Symbologies
1D	Code 39, Full ASCII Code39, Interleave 2 of 5, UPC A/E/E1, MSI, Codabar, Code 11, EAN8/13, Code 93, Code 128, EAN128, Code32, GS1 databar Code, Bookland EAN, Discreate 2 of 5, Chinese 2 of 5, ISBT 128, UCC Coupon Extended Code, Bookland 128
Data Formating	Prefix, Suffix, Code ID, Reformatting Date

Electrical
Indicator	Direct decode indicator, good decode LED, Beeper (adjustable tone/volume)
Operation Voltage	4 VDC to 5.5 VDC
Current Consumption	Operation mode: <110mA Standby mode: <20mA

Environmental
ESD Protection	Functional after 8K Contact 15K Air
Mechanical Shock	2.1M onto concrete (scanner only)
Operating Temp.	-10°C to 50°C
Storage Temp.	-40°C to +70°C
Relative Humidity	95% non-condensing
IP Rating	IP42

Regulatory Approvals
CE, FCC, BSMI, VCCI

Inside the box
MS851 ESD scanner +
Interface (USB) Cable + 5 years warranty

MS851B ESD
1D Laser / Bluetooth

1D LASER

BLUETOOTH LE® V4.2

Physical characteristics
Sensor	1D Laser
Illumination	650 nm visible laser diode
Ambient light	Sunlight: 8000 Ft Candles (86,111 Lux)
Scan Rate	104 (± 12) scans/sec (bidirectional)
Angle Sensor	±40° Skew, ±65° Pitch,
Roll Angle	±35° from vertical
Optical Resolution	4mil (0.1mm)
Printing Contrast Scale	minimum 20%

Reading distance (DOF PCS=80%)*
* Depending on width, type and quality of barcode.

Symbology	Near (mm)	Far (mm)
Code 128, 5 mils	3.55 cm	17.78 cm
Code 39, 5 mils	3.05 cm	26.67 cm
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Code 39, 20 mils	3.56 cm	116.84 cm
Code 39, 55 mils	8.64 cm	177.80 cm
Code 39, 100 mils	60.96 cm	457.20 cm

Communication
Radio	Bluetooth® LE V4.2, Bluetooth® 2.1 +EDR, Class1, Dual mode, Wireless Coverage 100m (line of sight)
Interface/ Profile	Serial Port and HID profiles
Host Interface	USB: HID / SPP SUBD9: RS232 (other cable)
Memory Buffer	7MB (batch mode) 20KB (auto mode)

Mechanical
Scanner Dimension	87.8 L x 71.6 W x 177.7 H (mm)
Scanner Weight	213g (without cradle)
Trigger Switch Life	10 million times
Cradle Dimension	120.6 L x 88.7 W x 86.0 H (mm)

Symbologies
1D	Code 39, Full ASCII Code39, Interleave 2 of 5, UPC A/E/E1, MSI, Codabar, Code 11, EAN8/13, Code 93, Code 128, EAN128, Code32, GS1 databar Code, Bookland EAN, Discreate 2 of 5, Chinese 2 of 5, ISBT 128, UCC Coupon Extended Code, Bookland 128
Data Formating	Prefix, Suffix, Code ID, Reformatting Date

Electrical
Indicator	LED & Beeper & Vibrator
Battery Type	Rechargeable & replaceable pack
Battery Capacity	2850mAh
Charging time	<6.5 hours
Operating Time	>30 hours (Up to 50,000 scans at 1 scan/5 second)

Environmental
ESD Protection	Functional after 8K Contact 15K Air
Mechanical Shock	2.1M onto concrete (scanner only)
Operating Temp.	-10°C to 50°C
Storage Temp.	-40°C to +70°C
Relative Humidity	95% non-condensing
IP Rating	IP42

Regulatory Approvals
CE, FCC, BSMI, VCCI, NCC, TELEC, BQB

Inside the box
MS851B ESD scanner + Battery + Cradle +
Interface (USB) Cable + 5 years warranty

MS852+ ESD
2D High Density USB

2D IMAGER

S-USB

Physical characteristics
Sensor	1280 x 800 global shutter
Illumination	Red Laser
Ambient light	White LED (exempt risk group) 100,000 Lux (Sunlight)
Scan Rate	104 (± 12) scans/sec (bidirectional)
Angle Sensor	±60° Skew, ±60° Pitch,
Roll Angle	0 - 360°
Optical Resolution	1D 3mil/ 0.075mm
Printing Contrast Scale	minimum 20%

Reading distance (DOF PCS=80%)*
* Depending on width, type and quality of barcode.

Symbology	Near (mm)	Far (mm)
13 mil UPC	3.4 cm	57.3 cm
5 mil Code 39	7 cm	30.1 cm
10 mil Code 39	2.9 cm	51.7 cm
20 mil Code 39	3.5 cm	80 cm
15 mil Code 128	3.4 cm	65 cm
10 mil DM	7.2 cm	29.7 cm
6,7 mil PDF417	8.4 cm	24.4 cm
15 mil QR Code	3.3 cm	39 cm

Communication
Radio	-
Wireless Coverage	-
Interface/ Profile	-
Host Interface	USB: HID / SPP
Memory Buffer	-

Mechanical
Scanner Dimension	87.8 L x 71.6 W x 177.7 H (mm)
Scanner Weight	165g
Trigger Switch Life	10 million times
Cradle Dimension	-

Symbologies
1D	Codabar, Code 11, Code 128, Code 2 of 5, Code 39, Code 93 and 93i, EAN/JAN-13, EAN/JAN 8, IATA Code 2 of 5, Interleaved 2 of 5, Matrix 2 of 5, MSI, GS1 Databar, UPC-A, UPC E, UPC-A/EAN-13 with Extended Coupon Code, Coupon GS1 Code 32(PARAF), EAN-UCC Emulation, GS1 Data Bar, TLC39
2D	**2D Stacked:** Codablock A, Codablock F, PDF417, MicroPDF417 **2D Matrix:** Aztec Code, Data Matrix, MaxiCode, QR Code, Chinese Sensible (Han Xin), Grid Matrix, Dot Code **Postal:** Australian Post, British Post, Canadian Post, China Post, Japanese Post, Korea Post, Netherlands Post, Planet Code, Postnet
Data Formating	-
Other	Support **OCR**, **Dot Code** and **Digimarc** barcodes

Electrical
Indicator	Direct decode indicator, good decode LED, Beeper (adjustable tone/volume)
Operation Voltage	4 VDC to 5.5 VDC
Current Consumption	Operation mode: <252mA Standby mode: <77mA

Environmental
ESD Protection	Functional after 8K Contact 15K Air
Mechanical Shock	2.1M onto concrete (scanner only)
Temp.	Operating: -10°C to 50°C / Storage: -40°C to +70°C
Relative Humidity	95% non-condensing
IP Rating	IP42

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MS852B+ ESD
2D High Density Bluetooth

2D IMAGER

BLUETOOTH LE® V4.2

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13 mil UPC	3.8 cm	40.5 cm
3 mil C39	6.6 cm	18.3 cm
5 mil C39	5.3 cm	26.5 cm
6,7 mil DM	7.2 cm	18.0 cm
10 mil DM	5.9 cm	24.8 cm
5 mil PDF	7.4 cm	18.6 cm
6,7 mil PDF	5.9 cm	23.8 cm
6,7 mil QR	7.2 cm	16.3 cm
15 mil QR	2.7 cm	30.8 cm

Communication
Radio	Bluetooth® LE V4.2, Bluetooth® 2.1 +EDR, Class1, Dual mode, Wireless Coverage 100m (line of sight)
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