Communications:
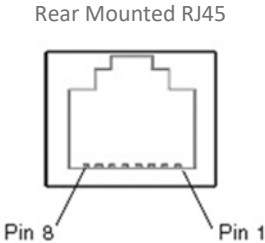
The DSE425 includes an RJ45 host interface connector.   The pin outs and specific models are listed below.

PIN	DSE425R	DSE425U
1	RTS	USB D+
2	HW_TRIGGER	USB D-
3	GND	GND
4	RXD	NC
5	TXD	NC
6	+5VDC	+5VDC
7	POWER_ON	POWER_ON
8	CTS	HW_TRIGGER

Rear Mounted RJ45

Pin 8   Pin 1

Description:

POWER_ON signal can be used by host to switch-on/off the whole Scan Engine: leave it unconnected if not used

HW_TRIGGER signal can be used to physically issue a "trigger pressure" event to the Scan Engine: leave it unconnected if not used

The following accessory interface cables can be purchased from Diamond Technologies.

CAB-DSE-001 - Cable RJ45 to USB 2M, for use with DSE USB series
CAB-DSE-002 - Cable RJ45 to DB9 including power jack, power supply

The default RS232 communication parameters are 9600 Baud, No Parity, 8 Data Bits, 1 Stop bit.

Electrical requirements:

Model	Interface	Min	Max	Unit
DSE425U-ER-TL	USB RJ45	4.75	5.25	VDC
DSE425S-ER-TL	RS232 RJ45	4.5	26	VDC

Current Use (RS232 at 5V):
Operating (Typical): <230mA
Standby/Idle (Typical): 100mA

Integrated HW features:

The DSE425 includes several integrated hardware features including audible good read beeper, trigger button, good read green spot LED indicator.

Illumination and Scanning:

The integrated Illumination System is comprised of two white LEDs and non-imaging optics designed to provide first-class reading performances, even in total darkness.

Aiming System

The aiming system is based on a 650nm laser diode and related optics. It projects a highly visible 4-Dot aimer with center-cross for targeted scanning. The central cross represents the center of the field of view, while the four dots show the boundaries of the field of view.

Below is the scanners scanning aimer at 200mm:
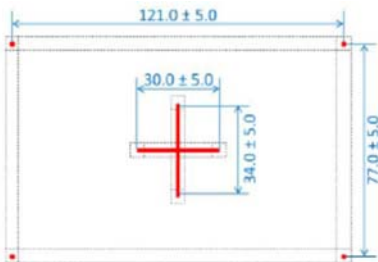
Regulatory

⚠ WARN-ING	Viewing the laser output with certain optical instruments (for example, eye loupes, magnifiers, and microscopes) within a distance of 100mm may pose an eye hazard.

⚠	**STANDARD LASER SAFETY REGULATIONS** This product conforms to the applicable requirements of both CDRH 21 CFR 1040 and EN 60825-1 at the date of manufacture. For installation, use and maintenance, it is not necessary to open the device.

Programming

While no programming is needed to utilize the DSE425 your particular application may require changes to the scanners default operation.

The DSE425 supports several standard operating modes. These include:

Stand Mode: (DEFAULT) No trigger pull is required to read a barcode. Scanning is turned on automatically when an item is placed in the reader's field of view. If the trigger is pressed, the reader acts as if it is in single read mode. Double Read Timeout prevents undesired multiple reads while in this mode.

Trigger Single: When the trigger is pressed, scanning is activated until one of the following occurs:
- Scanning Active Time has elapsed
- a label has been read
- the trigger is released

Trigger Hold Multiple: When the trigger is pressed, scanning starts and the product scans until the trigger is released or Scanning Active Time has elapsed. Reading a label does not disable scanning. Double Read Timeout prevents undesired multiple reads of the same label while in this mode.

Trigger Pulse Multiple: When the trigger is pressed, continuous scanning is activated until Scanning Active Time has elapsed or the trigger has been released and pressed again. Double Read Timeout prevents undesired multiple reads of the same label while in this mode.

Flashing: The reader flashes on and off regardless of the trigger status. Flash rate is controlled by Flash On Time and Flash Off Time. When Flash is ON the imager reads continuously; when Flash is OFF scanning is deactivated.

Always On: No trigger pull is required to read a barcode. Scanning is continually on. If the trigger is pressed, the reader acts as if it is in Trigger Single Mode. Double Read Timeout prevents undesired multiple reads of the same label while in this mode.

The default operating mode for the DSE425 is Stand mode.   The scanners operating mode and other parameters can be programmed using either programming barcodes or programmatically.   A full programming manual is available at www.diamondt.com.

Operating Mode Programming Barcodes

The following barcodes can be used to change the operating mode:

Prior to scanning the specific operating mode code you must scan the enter/exit programming command.   After scanning the operating mode code re-scan the enter/exit programming command.

Enter/Exit Programming

Scan Mode = Trigger Single

Scan Mode = Trigger Hold Multiple

Scan Mode = Trigger Pulse Multiple

Scan Mode = Flashing

Scan Mode = Always On

Scan Mode = Stand Mode

The DSE425 also supports a programmatic interface. Included in this are several commands that can be sent directly to the reader through a terminal emulation program .These commands are accepted directly from the reader and do not require scanning an enter programming code and do not require placing the DSE in program mode.   A full programming manual is available at www.diamondt.com.   Examples of direct commands include:

E = Enable Scanner

D = Disable Scanner

X = Software trigger Press, simulates trigger press

T = Software trigger Release , simulates trigger release

READING PERFORMANCE

IMAGER SENSOR	WVGA: 752 x 480 pixels
LIGHT SOURCE	Aiming: 650 nm VLD Illumination: Internal White LEDs
PRINT CONTRAST RATIO (MIN)	25%
FIELD OF VIEW	40° H x 26° V
READING ANGLE	Pitch: +/- 60°; Roll (Tilt): +/-180°;Skew (Yaw): +/- 60°
READING INDICATORS	Green Spot good read confirmation (optional), Audible Beeper
RESOLUTION (MAXIMUM)	1D Linear: 3 mils; DataMatrix: 7.5 mils; PDF417: 5 mils

DSE425 Compact 1D/2D Embedded Barcode Scan module

Quick Reference Guide

Model: DSE425S-ER-TL , DSE425U-ER-TL

Manual Version 1.01

The Diamond Technologies DSE425 is an embedded barcode scan module designed for integration into OEM equipment such as Lab instrumentation, Medical Devices, Kiosks, Automated machines, and customer facing applications.   This ultra compact, reliable, barcode module is an omni directional reader that will read all standard 1D and 2D barcodes with high accuracy regardless of code orientation. The reader includes integrated user feedback in the form of patented Good Read Green spot and loud audible beep.

The DSE425 reader includes patented, highly accurate, decode software libraries.   Depending on model the reader provides decoded output through its' RS232 or USB interface.   The readers hardware and software has been designed for the user to easily integrate the module into a host system. This guide provides the basic instructions for that integration.

Physical Mounting:

The DSE425x-ER-TL provides (3) M2X.04 threaded mounting holes on the rear of the enclosure.