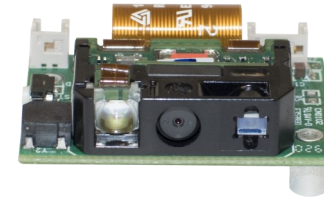


Quick Reference Guide



Models: DE07-xx-003, DE07-xx-004, DE07-xx-005

Manual Version 1.01



The Diamond Technologies DE07 is an ultra slim embedded 1D/2D image based barcode scanner designed for integration into OEM equipment including Lab instrumentation, Medical Devices, Kiosks, Automated machines, and customer facing applications. This compact, reliable, barcode scanner provides image based reading of all standard 1D and 2D barcodes. The reader, depending on model, includes either red or white illumination LED, several options for aiming pattern, and varying optics including high density and standard range.

The reader includes patented, highly accurate, decode software libraries. The reader's decoded output is provided to the host system through either USB, RS232, or UART interface depending on model. The reader's hardware and software has been designed for the user to easily integrate the scanner into a host system. This guide provides the basic instructions for that integration.

Physical Mounting:

The DE07-xx-xxx models provide (2) M2X.04 Thread mounting holes in the rear.



Illumination and Scanning

The DE07 scanner is equipped with either a red or white LED illumination light and several options for aiming LED or aiming laser as shown below. The aimer should be targeted over the code to be read. The aimer does not need to be centered on the code and the reader can read codes anywhere in its field of view. Examples of aiming which will result in good reads are shown below (Multiple aimer styles depicted):



Basic Reading Rang-

The DE07 can be purchased with different optic characteristics. The basic reading ranges for these optics are listed in the below charts. Consult your model number to determine your particular reading range.

STANDARD RANGE (DE07-Sx)			
Symbology	Near Distance (cm [in])	Far Distance (cm [in])	Delta (cm [in])
5 mil C39	70 [2.76]	301 [11.85]	231 [9.09]
10 mil C39	40 [1.57]	517 [20.3]	477 [18.73]
15 mil C128	42 [1.65]	650 [25.6]	608 [23.95]
6.7 mil PDF417	84 [3.3]	244 [9.6]	160 [6.3]
15 mil QR	39 [1.54]	414 [16.3]	375 [14.76]

HIGH DENSITY (DE07-Hx)			
Symbology	Near Distance (cm [in])	Far Distance (cm [in])	Delta (cm [in])
3 mil C39	66 [2.6]	183 [7.2]	367 [14.4]
6,7 mil DM	72 [2.8]	180 [7.1]	108 [4.3]
10 mil DM	59 [2.3]	248 [9.8]	189 [7.5]
5 mil PDF	74 [2.9]	186 [7.3]	112 [4.4]
15 mil QR	27 [1.1]	308 [12.1]	281 [11]

Electrical and Communication Connections:

The DE07 provides a 4 pole DF13 terminal block for power and communications. The pin connections for specific models are listed below. The default RS232 and UART communication parameters are 115K Baud, No Parity, 8 Data Bit, 1 Stop bit.

DE07-xx-003 DF13 USB interface

DE07-xx-004, DE07-xx-005 DF13 RS232/UART interface

Pin	Function
1	GND
2	D-, Data -
3	D+, Data +
4	VBUS+, 5V

Pin	Function
1	GND
2	RX
3	TX
4	VIN

Diamond Technologies also provides a range of off the shelf cables for scanner interfacing. These include:

CAB-DSE-004 - DF13 to USB A 1M

CAB-DSE-005 - DF13 to RS232 DB9 1M

Power requirements for the various models are listed below.

Model	Interface	Min	Max	Unit
DE07-xx-003	USB DF13 Cable	4.75	5.25	VDC
DE07-xx-004	RS232 DF13 Cable	4.5	26	VDC
DE07-xx-005	UART DF13 Cable	4.5	26	VDC

Programming

Note if you are using the USB version of the DE07 it is important to install the USB device driver before plugging the DE07 into your system. The driver is available from Diamond Technologies.

The DE07 supports several interface modes when operating as a USB device. The modes can be configured in the scanner via programming barcodes or through the scanners' programmatic interface. The most common interfaces are USB COM where the scanner operates as a USB serial interface and keyboard where the scanner operates as a keyboard input device. The following programming barcodes can be used to set these interfaces.



USB Keyboard



USB Serial

The DE07 can be configured either using barcode programming labels or through a programmatic interface. The programmatic interface allows the scanners configuration to be changed via simple commands from the host processor. See the programming manual for more information on programmatic interface. The DE07 can also operate in several operating modes. These include a trigger mode in which the DE07 will start its' reading phase on receiving a trigger and presentation mode in which the sensing of motion in the DE07's field of view will start the reading phase. The following barcode labels can be used to change the scanners operating mode as desired. Additional operation modes can be set by seeing the settings in the programming guide.



Presentation Mode



Manual Trigger Mode

The scanner can also be easily triggered by sending the below trigger command via USB or serial communications to the reader:

Command: {SYN}T{CR}

where SYN = Hex code 0x16 and CR is Hex code 0x0d

The scan module also contains a two pole hardware trigger that utilizes a Hirose connector that can be mated with a DF13-2S-1.25C connector. The hardware trigger operates on 3.3V signal. Connecting the two pins of the connector together will actuate the trigger input to the scanner.

On sending the above command to the scanner, or triggering the hardware trigger or push button, the scanners illumination and LED lights will come on and the scanner will begin to look for and read a barcode. On reading a barcode the LED illumination and aiming lights will go off. If the scanner does not read a barcode, barcode reading can be terminated by sending the scanner the following deactivation trigger:

Command: {SYN}U{CR}

Where SYN is the Hex code 0x16 and CR is the Hex code 0x0d

Default operating mode

The default code is provided below. This will revert the scanner into it's default configuration.



Activate Custom Defaults