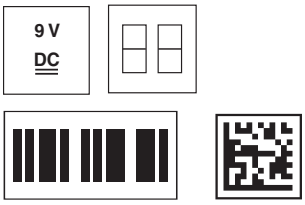
IT 6320 — 2D-code hand-held scanner

Part No. 501 05787



- Hand-held scanner for Data Matrix ECC200 codes and bar codes
- High resolution for direct part marking and labels
- Transmission to ST 2020 base station via Bluetooth® standard
- Robust trigger button
- Built-in decoder
- Read-display
- RS 232, USB and PS/2 interface
- Operating temperature from 0°C through 50°C

Dimensioned drawing

Electrical connection

TTL RS 232 cable/PIN 9 (Part No.: 501 04586)

9-pin Sub-D	Signal	ST 2020 RJ 41
SH	Shield	2
2	TXD	6
3	RXD	5
5	GND	4
7	CTS	9
8	RTS	8
9	+5VDC	7

USB cable (Part No.: 501 03404)

USB type A	Signal	ST 2020 RJ 41
1	+5VDC	7 + 3
2	Data -	10
3	Data +	2
4	GND	4

PS/2 cable (Part No.: 501 03409)

Mini DIN connector	Mini DIN socket	Signal	ST 2020 RJ 41
1	-	PC Data	6
2	2	NC	-
3	3	GND	4
4	4	+5VDC	7
5	-	PC Clock	5
6	6	NC	-
-	1	KB Data	8
-	5	KB Clock	9

CE

Accessories:

(available separately)

- TTL RS 232 cable/PIN 9 for IT 4xxx (Part No.: 501 04586)
- PS/2 cable for IT 4xxx (Part No.: 501 03409)
- USB cable for IT 4xxx (Part No.: 501 03404)
- Power supply unit for IT 4x2x (Part No.: 501 03989)

Specifications

Electrical data

Operating voltage	+9VDC
Power consumption	approx. 18W
Stamina battery	approx. 8h during normal use (25°C) and with fully charged battery

RF data transmission

Frequency	2.4 … 2.4835GHz (ISM band), Bluetooth® V1.2 class 2
Range	10m typ.

Interfaces

Interface type (at ST 2020)	TTL RS 232 and USB for code output, setup and image transmission; PS/2 for code output
Trigger	via button or serial

Code types

Code types	Data Matrix ECC 200, QR Code Bar Codes: 2/5 Interleaved, UPC/EAN, Code 39, Code 128, Code 93
Read direction	omnidirectional, various tilt and rotational angles up to 34°

Optical data

Optical system	high-resolution pixel array with 1280 x 960 pixels	
Light source	integrated diffuse LED, light-field and dark-field LED	
	DPM	**ILR**
Point of focus (from pane)	51mm	102mm
Read distance	0 … 85mm	0 … 160mm

Mechanical data	**IT 6320**	**ST 2020**
Housing	polycarbonate/ABS	
Weight	330g	250g
Dimensions	84 x 175 x 134mm	79 x 142 x109
Shock resistance	25 falls from a height of 2m	50 falls from a height of 2m
Protection class	IP 54	IP 41

Environmental data

Ambient temp. (operation)	0°C … +50°C, during battery charging process: 0°C … +40°C
Ambient temp. (storage)	-40°C … +60°C
Relative air humidity	0% … 95% (non-condensing)

Reading field

IT 6320 DPM (6320 IDP 351 SE)
Point of focus at 51mm

Barcode m = 0.33mm	0 … 62mm
2D code cell = 0.127mm	0 … 36mm
2D code cell = 0.25mm	0 … 55mm
2D code cell = 0.50mm	0 … 95mm

IT 6320 ILR (6320 ILR 351 SE)
Point of focus at 102mm

Barcode m = 0.19mm	10 … 104mm
Barcode m = 0.25mm	0 … 124mm
Barcode m = 0.38mm	0 … 160mm
2D code cell = 0.19mm	20 … 99mm
2D code cell = 0.25mm	10 … 114mm
2D code cell = 0.50mm	0 … 150mm

Order guide

	Type	Part No.
2D-code hand-held scanner	IT 6320 DPM	501 05382
	IT 6320 ILR	501 07465
Base station for Bluetooth®-transmission With TTL-RS 232/USB/PS2-Interface (without cable)	ST 2020	501 03990

Remarks

Ergonomically designed 2D-code hand-held scanner with integrated decoder for direct part marking (DPM).

Data transmission between hand-held scanner and base station via Bluetooth® V1.2 class 2.

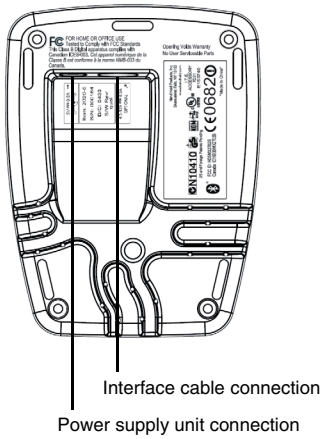
ST 2020 base station: keyboard-wedge operation via PS/2 and USB interface, or serial communication via TTL RS 232 and USB interface

For a functional unit, a hand-held scanner and a ST 2020 base station as well as a power supply unit and corresponding cable must be ordered.

Bluetooth®

Connecting the base station ST 2020

Shown in the adjacent figure are the individual steps for installing the cable on the base station; these steps are described in the following.



1. To secure the interface cable to the base station, proceed as follows: plug the RJ 41 connector into the socket on the bottom of the station until the cable clicks into place.
2. Connect the other end of the interface cable to the appropriate connection socket on the computer.
3. You will need a power supply unit for voltage supply if you would like to charge the hand-held scanner at the basis station or if you use an RS 232 interface. Use the pin assignments (see page 1) to select the appropriate cable for your application.
4. Connect the power supply unit to the power socket.
5. To configure the hand-held scanner, use the codes for the respective interface configuration, or use the setup tool.
6. Check the operational readiness of the scanner by pointing the scanning surface towards a flat surface and pulling the trigger. A green target line as well as the red illumination should now be visible. Now scan a sample label. The scanner emits an audible signal to confirm that the label has been read; if necessary, the data are now passed on to the computer.

Configuration

The hand-held scanner can always be configured using 2D codes. To do this, the 2D code must first be selected on the package insert and then the trigger actuated in order to read the code. The configuration is then immediately accepted and executed.

Several of the most important configurations are listed in the following.

A second option is to configure the hand-held scanner with the USB and RS 232 interfaces with the aid of the **6300 Series Setup Tool** PC program. You can download and install this program from our homepage at *www.leuze.de*.
The program can be used to make settings and transfer them to the hand-held scanner. The configuration can also be stored so that it can be reused at a later time.

The standard applications are described and summarised below.

Notice!

Additional information on the device and short instructions can be found on the CD-ROM which is included with the device or on the Internet at www.leuze.de.

Resetting the IT 6320 to factory settings

To reset all parameters to factory settings, scan the two adjacent 2D codes.

Resetting the hand-held scanner

Attention!

All settings are lost!!!

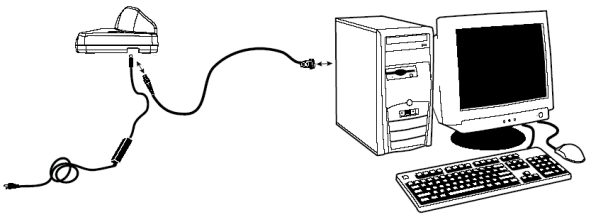
Resetting the base station

After scanning the adjacent 2D codes, return the IT 6320 to the base station to apply the settings. This procedure is concluded with audible confirmation signals. You may then continue making settings or operation of the device.

Connecting the IT 6320 to the serial PC interface

required parts:

1x		**IT 6320 DPM** or **IT6320 ILR**
1x	**501 03 990**	**ST 2020**
1x	**501 04 586**	**Cable TTL-RS232/PIN9**
1x	**501 03 989**	**Power supply unit ST 2020**



Procedure:

1. Switch off the PC.
2. Connect the interface cable to a free COM port (RS 232) on the computer.
3. Switch the PC back on.
4. Scan the adjacent 2D code and return the IT 6320 to the base station to apply the settings.
   The IT 6320 is set to the following transmission parameters:
   RS 232 transmission with 115200 baud, 8 data bits, 1 stop bit, no parity, terminators <CR><LF>.
5. If necessary, adjust the transmission parameters of the used COM port to those of the IT 6320.

Connecting the IT 6320 to the MA 41 DP-K or MA 41 IS

required parts:

1x		**IT 6320 DPM** or **IT6320 ILR**
1x	**501 03 990**	**ST 2020**
1x	**501 04 586**	**Cable TTL-RS232/PIN9**
1x	**501 03 989**	**Power supply unit ST 2020**
1x	**500 35 421**	**KB 021 Z**
1x	**500 33 638**	**MA 41 DP-K** for Profibus (for Interbus: **500 28 994 MA 41 IS** or **500 30 085 MA 41 IS PDP**)

①

Pin assignments KB 021 Z:

Core colour:	signal	terminal in the MA 41:
brown	(RXD)	2
white	(TXD)	1
blue	(GND)	4
red	(VCC)	✂
black	(GND)	✂
bare (shield)	(PE)	21

Procedure:

1. Connect cable KB 021 Z to the MA 41… acc. to the above pin assignments.
2. Connect the interface cable to cable KB 021 Z.
3. Scan the two adjacent 2D codes in succession (first ①, then ②) and return the IT 6320 to the base station to apply the settings.
   The IT 6320 is set to the following transmission parameters:
   RS 232 transmission with 9600 baud, 8 data bits, 1 stop bit, no parity, terminators <CR><LF>.

②

Connecting the IT 6320 to the MA 21

required parts:

1x		**IT 6320 DPM** or **IT6320 ILR**
1x	**501 03 990**	**ST 2020**
1x	**501 04 586**	**Cable TTL-RS232/PIN9**
1x	**501 03 989**	**Power supply unit ST 2020**
1x	**500 35 421**	**KB 021 Z**
1x	**500 30 481**	**MA 21 100**

①

Pin assignments KB 021 Z:

Core colour:	signal	terminal in the MA 21:
brown	(RXD)	26
white	(TXD)	27
blue	(GND)	28
red	(VCC)	✂
black	(GND)	✂
bare (shield)	(PE)	21

②

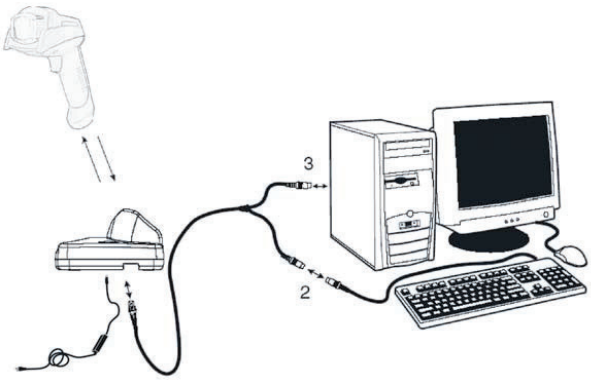
Procedure:

1. Connect cable KB 021 Z to the MA 21… acc. to the above pin assignments.
2. Connect the interface cable to cable KB 021 Z.
3. Scan the three adjacent 2D codes in succession (first ①, then ②, then ②) and return the IT 6320 to the base station to apply the settings.
   The IT 6320 is set to the following transmission parameters:
   RS 232 transmission with 9600 baud, 7 data bits, 1 stop bit, even parity, terminators <CR><LF>.
4. Use the BCL Config software tool to configure the MA 21 to the following transmission parameters:
   9600 baud, 7 data bits, 1 stop bit, even parity, terminators <CR><LF>.

③

Connecting the IT 6320 to the PS2 interface

The operation of the IT 6320 in keyboard-wedge mode is described in this section. A PC keyboard is emulated in this operating mode. The data which are read in are written directly to the currently activated program. Thus, the data can be processed further in all standard programs.



required parts:

1x		**IT 6320 DPM** or **IT6320 ILR**
1x	**501 03 990**	**ST 2020**
1x	**501 03 989**	**Power supply unit ST 2020**
1x	**501 03 409**	**Cable PS2**

Procedure:

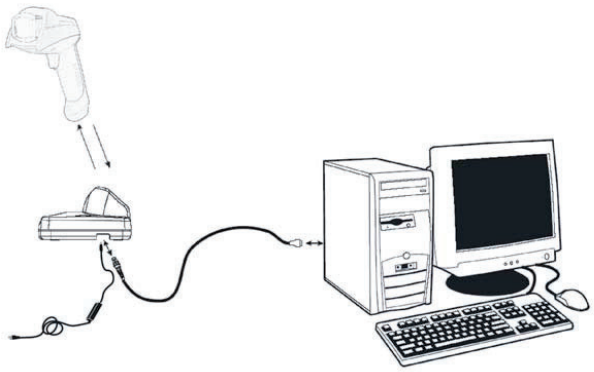
1. Switch off the PC.
2. Unplug the keyboard.
3. Connect the PS2 cable for the ST 2020 base station between the keyboard and the PC.
4. Switch the PC back on.
5. Scan the adjacent 2D code and return the IT 6320 to the base station to apply the settings.

Connecting the IT 6320 to the USB interface (keyboard emulation)

The operation of the IT 6320 in keyboard-emulation mode on a USB port is described in this section. A PC keyboard is emulated in this operating mode. The data which are read in are written directly to the currently activated program. Thus, the data can be processed further in all standard programs.

required parts:

1x	**IT 6320 DPM** or **IT6320 ILR**
1x **501 03 990**	**ST 2020**
1x **501 03 989**	**Power supply unit ST 2020**
1x **501 03 404**	**Cable USB**



Procedure:

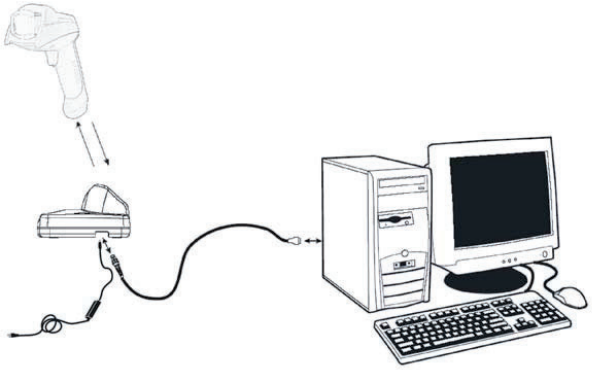
1. Connect the USB cable for the base station to a free USB port.
2. The scanner acknowledges this connection with a beep.
3. Scan the adjacent 2D code and return the IT 6320 to the base station to apply the settings.

Connecting the IT 6320 to the USB interface (COM-port emulation)

The operation of the IT 6320 as a serial interface on a USB port is described in this chapter. A COM interface is emulated in this operating mode. The data which are read in are sent to a new COM interface. The driver with which you emulate this COM interface can be found on the CD-ROM or can be downloaded from our homepage at *www.leuze.de*. Thus, the data can be processed further in programs which expect data via COM interfaces.

required parts:

1x	**IT 6320 DPM** or **IT6320 ILR**
1x **501 03 990**	**ST 2020**
1x **501 03 989**	**Power supply unit ST 2020**
1x **501 03 404**	**Cable USB**



Procedure:

1. Connect the USB cable for the base station to a free USB port.
2. Scan the adjacent 2D code and return the IT 6320 to the base station to apply the settings.
3. Install the USB serial driver when you are prompted to do so by Windows.

Open a terminal program or your program for the serial interface, select the new COM port, and make the following settings: baud rate 38400, 8 data bits, 1 stop bit and no parity.
A <CR> is still transmitted as terminator.