

Pictomat

Embedded Machine Vision

PICTOMAT - USB-Driver



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You can obtain the PICTOMAT USB Driver only from IBN GmbH or its resellers. Products of other manufacturers with a similar functionality must not be used together with the PICTOMAT.

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1 Introduction



This is the technical documentation of the PICTOMAT USB Driver.

The PICTOMAT USB Driver connects the PICTOMAT to a standard USB keyboard.

2 Device Connection



Connect the power supply to the USB Driver (Connection 5 in Device Description).

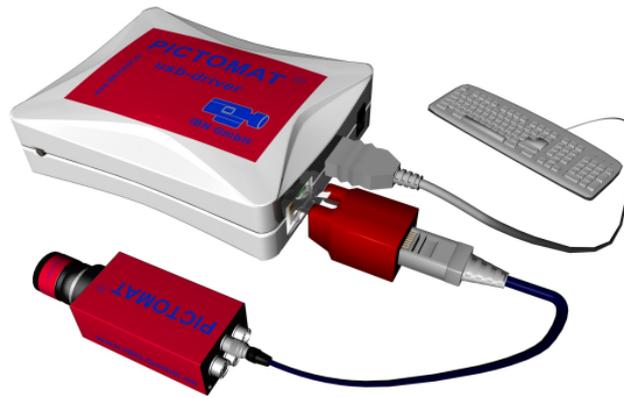


Connect the USB cable of the keyboard to the USB Driver (Connection 4 in Device Description).

2.1 Connection to the Camera



Connect the crossover module to the LAN cable of the camera. Connect the crossover module to the USB Driver (Connection 1 in Device Description).



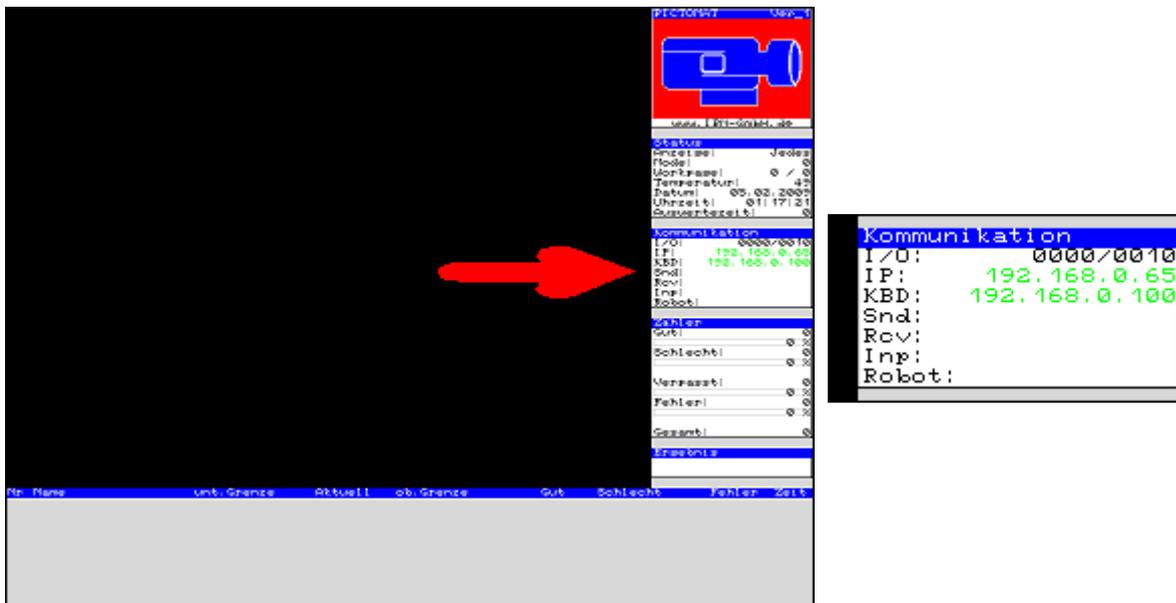
2.2 Connection to the Switch



Connect the LAN cable of the camera to the switch. Connect the USB Driver to the switch using the LAN cable (Connection 1 in Device Description).

3 Checking the Connection

Start the PICTOMAT if it does not run already.
On the right of the screen in the info section you see the IP-address of the USB Driver behind **KBD** (192.168.0.100) coloured green:



If the shown IP-address behind **KBD** is coloured red or black, the keyboard is not correctly connected. In this case, you should check all connections of the USB Driver and of all other connected devices.



4 Settings for Experts

The following chapters show the settings of the PICTOMAT camera and the PICTOMAT USB Driver.

4.1 PICTOMAT Camera Settings

You must change the PICTOMAT settings for using the USB Driver together with the PICTOMAT. The PICTOMAT settings are saved in the file "Pictomat.001" and are loaded during the boot process.

The "Pictomat.001" is stored in the directory "md:/PICTOMAT/PRIVATE/" on the camera.

If this directory is empty, you can find this file also in the directory "md:/PICTOMAT/INI/".

Download this file via FTP and open it with an ASCII editor, e.g. **Notepad**.

The file is separated in several sections. The section "Pictomat" contains the following lines:

```
# IP Adresse und Port einer externer USB-Tastatur
# default
#KBD_IP_Adr = 192.168.0.100
#KBD_Port = 4001
```

Remove the character "#" in line 3 and 4, so that it looks like this:

```
# IP Adresse und Port einer externer USB-Tastatur
# default
KBD_IP_Adr = 192.168.0.100
KBD_Port = 4001
```

After changing the settings you must save and upload the file into the camera directory "md:/PICTOMAT/PRIVATE/".

Then you must reboot the PICTOMAT (hot key <STRG>+<U>).



If you switch IP / port settings of the USB driver, you will have to edit these settings in the "Pictomat.001" as well !

4.2 PICTOMAT USB Driver Settings

Only network experts - e.g. administrators - should change the settings explained here. If you do not know anything about the used items, then do not make any changes !

You can establish a Telnet connection to the USB Driver in order to configure it. The standard IP address of the driver is 192.168.0.100. After connecting to the driver you see this menu:

```
silex SX-1000U Ver 1.3.2 S2 TELNET server.
Copyright (C) 2004-2008 silex technology, Inc.
login: █
```

Type "root" and press <RETURN>. The driver asks for a password. Press <RETURN> without typing a password. Then you see the configuration menu of the driver:



No.	Item	Value	(level.1)
1	Configure General		
2	Configure TCP/IP		
10	Configure Keyboard		
96	Display Status		
97	Reset Settings to Defaults		
98	Restart Device Server		
99	Exit		
Please select(1 - 99)? █			

Type a number in order to go into a submenu (Column **No.**). There you see more menu items, which you select by typing the respective number again.

Menu Nr.	Name	Description
1:	Configure General	General settings
2:	Configure TCP/IP	TCP / IP settings (e.g. adress)
10:	Configure Keyboard	Keyboard settings
96:	Display Status	Display of the current state
97:	Reset Settings to Defaults	Restore standard settings
98:	Restart Device Server	Restart the USB Driver
99:	Exit	Close configuration; only after changing some settings, an additional menu will appear for saving or not saving

With options "97: Reset Settings to Defaults" and "98: Restart Device Driver" you get the possibility to save or abort without saving.

Here you edit common settings:

No.	Item	Value	(level.2)
1	Change root Password	: "*****"	
2	LAN Interface	: AUTO	
99	Back to prior menu		
Please select(1 - 99)? █			

Menu Nr.	Function	Description	Notes
1:	Change root password	Changes password of the administrator	After calling this function you type in the new password and confirm with <RETURN>.
2:	LAN Interface	Configures the LAN interface	AUTO: driver configures itself automatically, recommended setting The values are speed values, i.e. 10 Mbit/s and 100 Mbit/s, full or half, depending on the connected network
99:	Back to prior menu	Back to the Main Menu	

Behind "Value" you see always the current state of the respective setting.



Configures network settings:

No.	Item	Value	(level.2)
1	: DHCP/BOOTP	: DISABLE	
2	: IP Address	: 192.168.0.100	
3	: Subnet Mask	: 255.255.255.0	
4	: Default Gateway	: 192.168.0.1	
5	: IP Filter Configuration		
6	: Network PnP	: ENABLE	
7	: Host Name	: "PICTOMAT-KBD"	
8	: WINS		
9	: mDNS	: ENABLE	
10	: mDNS Service Name	: "SX3EC2D6"	
99	: Back to prior menu		

Please select(1 - 99)? █

Menu Nr.	Function	Description
1:	DHCP/BOOTP	With ENABLE, DHCP is switched on, i.e. the driver receives the IP address from the DHCP server in the network. DISABLE switches off DHCP.
2:	IP-Address	After selecting this menu item you type in the new IP address and confirm with <RETURN>. DHCP /BOOTP should then be switched off (DISABLE).
3:	Subnet Mask	After selecting this menu item you type in the new subnet mask and confirm with <RETURN>. DHCP /BOOTP should then be switched off (DISABLE).
4:	Default Gateway	After selecting this menu item you type in the new gateway and confirm with <RETURN>. DHCP /BOOTP should then be switched off (DISABLE).
5:	IP Filter Configuration	Here you can either block or permit max three IP address ranges; limitation of IP addresses that gain access to the USB Driver.
6:	Network PnP	Activates (ENABLE) or deactivates (DISABLE) the network plug&play.
7:	Host Name	Define a hostname for the USB Driver
8:	WINS	Here you can configure a primary and secondary WINS-Server and define a NetBIOS Scope ID.
9:	mDNS	Activates (ENABLE) or deactivates (DISABLE) the mDNS-Protokolls
10:	mDNS Service Name	Here you can define the identifier of the USB Driver for mDNS
99:	Back to prior menu	Back to the Main Menu

Behind "Value" you see always the current state of the respective setting.



If you change the IP address of the USB Driver, you must also change the respective Settings in the file "PICTOMAT.001" !



Here you change keyboard settings:

No.	Item	Value	(level.2)
1	Keyboard Mode Port No.	: 4001	
2	Key Type	: OFF	
99	Back to prior menu		

Please select(1 - 99)? █

Menu Nr.	Function	Description
1:	Keyboard Mode Port No.	Port number of the keyboard
2:	Key Type	Must always be OFF
99:	Back to prior menu	Back to the Main Menu

Behind "Value" you see always the current state of the respective setting.



If you change the port of the USB Driver, you must also change the respective Settings in the file "PICTOMAT.001" !

Shows the state of the USB interfaces and of the system:

```
Display Status
1 : usb1
2 : usb2
3 : usb3
4 : usb4
5 : system
99 : Back to prior menu
Please select(1 - 99)?
```

Only option "5" is available here, showing the current settings of the USB Driver and the connection status of the USB interface. This can e.g. look like this:

```
SX-1000U Version 1.3.2 S2
TCP/IP status
IP address : 192.168.0.100
Subnet Mask : 255.255.255.0
Gateway addr: 192.168.0.1

USB status
Number of Device: 1
```

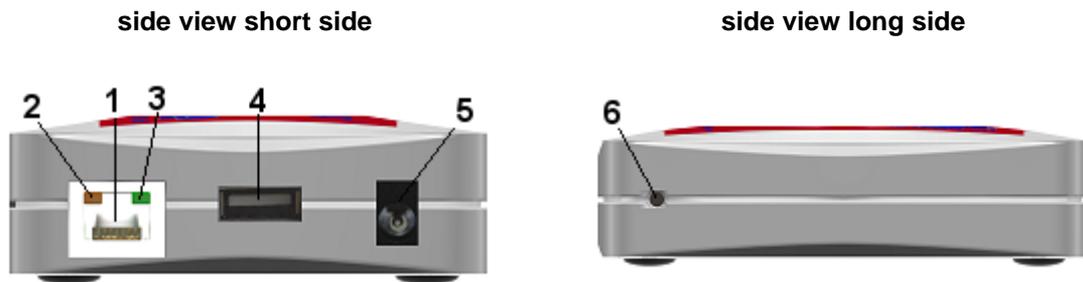
The first row shows the driver model and the firmware version.

Terminates the configuration providing the following options:

```
Exit
1 : Save and Restart
2 : Save and Exit
3 : Exit without Saving
99 : Back to prior menu
Please select(1 - 99)?
```



5 Device Description



- 1 Network port, here you connect the network cable
- 2 STATUS LED (orange), blinks during communication
- 3 LINK LED (green), is on during established network connection
- 4 USB port, here you connect the USB cable of the keyboard
- 5 Power supply, here you connect the power supply adapter
- 6 Reset key, restores factory settings of the driver

6 Restore Factory Settings

These are the factory settings of the PICTOMAT USB Driver:

user name: root
Password: (none)

No.	Item	Value	(level.2)
1	: DHCP/BOOTP	: DISABLE	
2	: IP Address	: 192.168.0.100	
3	: Subnet Mask	: 255.255.255.0	
4	: Default Gateway	: 192.168.0.1	
5	: IP Filter Configuration		
6	: Network PnP	: ENABLE	
7	: Host Name	: "PICTOMAT-KBD"	
8	: WINS		
9	: mDNS	: ENABLE	
10	: mDNS Service Name	: "SX3EC2D6"	
99	: Back to prior menu		
Please select(1 - 99)? █			

For resetting the USB Driver follow the instructions:

Remove the power supply from the driver.
Press the reset key (see also Device Description).
Keep the reset key pressed and connect the power supply simultaneously again.

Now the factory settings are active.

7 Security and Usage



Please regard the following notes for the use of the USB Driver:

In the following situations remove immediately all cables from the driver including the power supply:

- housing is damaged and / or open
- the USB Driver is hot
- the driver smells burnt and or / smoke escapes from the driver
- foreign objects or liquids got inside the driver

Danger of fire or electrical shock. Contact IBN.

Keep the driver and the cable away from children. They can strangle themselves or get an electrical shock.

You must not open or modify the driver and the power supply adapter.

If you pull a plug, then you do not pull the cable but only the plug itself. Danger of cable break.

When you move the driver, disconnect the cables before. Danger of electrical shock.

Only use the power supply adapter shipped together with the driver. Other adapters could possibly damage the driver.

Before you turn on the driver, check the connections of the cables.

When you do not use the driver for a long time, remove the power supply.

Do not use or store the driver under the following environment conditions:

- Strong vibrations
- Leaning or unstable underground
- Direct sunlight
- Humid or dusty environment
- Humidor
- Hot environment
- Big temperature fluctuation
- Strong electromagnetic radiation (e.g. a WLAN Access Point)