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CEREC / inLab MC XL

Operating MC XL via WLAN in infrastructure mode Restoring default settings



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Note on wireless communication

General information

1

The data communication between the CEREC 3 acquisition unit and the CEREC MC XL milling unit should preferably be implemented via WLAN. As for all wireless connections (e.g. mobile telephones) heavy utilization of the available radio channels or shielding caused by building installations (e.g. metal-shielded X-ray enclosures) may impair the quality of the connection. This may become noticeable through a reduction in range and/or a slower data transmission rate. In extreme cases, it will be impossible to establish a wireless connection.

Sirona has selected the best possible configuration for data communication via WLAN, which generally provides perfect functioning of this connection. However, in individual cases unrestricted wireless data communication may be impossible for the reasons mentioned above and/or due to local circumstances. In such cases, a cable LAN connection should be selected to ensure uninterrupted operation.

In the following text, the acquisition unit and the InLab system PC are both referred to as "PC".

The milling unit communicates with the PC via WLAN in the Infrastructure mode. The data is transmitted via an intermediate station or access point. The best possible data communication takes place when the access point and milling unit are interconnected via the included 1:1 network cable (10 m, Order No. 61 51 521).

The network cable must be connected to the milling unit at the LAN port (A).



WLAN connection of the PC to the milling unit in the infrastructure mode; Top: acquisition unit; Bottom: InLab System PC.

PC designation

Communication in the infrastructure mode



2 Preparations

The CEREC system PC can be equipped with different operating systems.

Go on to the following pages depending on the operating system actually installed:



Go on to the chapter "Preparations for Windows XP (up to HW Gx)" [\blacksquare 4]



Go on to the chapter "Preparations for Windows Vista (as from HW Gx)" [\blacksquare 8]

2.1 Preparations for Windows XP (up to HW Gx)

2.1.1 Deactivating the WLAN_card

Opening network connections

- 1. Click "Start"/"Settings"/"Control panel" in the task bar.
- 2. Double-click the "Network Connections" icon in the "Control panel" window.
 - ♥ The "Network Connections" window then opens.

Setwork Connections				
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u>	ools Adva <u>n</u> ced <u>H</u> elp			an a
🕞 Back 👻 🌍 👻 🏂	🔓 📋 🔎 Search 🏼 🎼 Fo	lders]•	
Address 🔕 Network Connections				💌 🔁 Go
	▲ Name	Туре	Status	Device Name
Network Tasks Create a new connection Set up a home or small office network Change Windows Firewall settings	LAN or High-Speed Internet	LAN or LAN or LAN or	Network cable unplugged Disabled Network cable unplugged	NVIDIA nForce Networking Controller Cisco Aironet 802.11a/b/g Wireless Adapter Marvell Yukon 88E8053 PCI-E Gigabit Ethernet Controller
3 objects				

Deactivating the WLAN card

- 1. Click the "Wireless Network Connection" with the device name Cisco Aironet 02.11a/b/g Wireless Adapter or ... Wireless-G PCI ... with the right mouse button.
- 2. Select "deactivate".

2.1.2 Configuring the network properties of the LAN card

Opening network connections

- 1. Click "Start"/"Settings"/"Control panel" in the task bar.
- 2. Double-click the "Network Connections" icon in the "Control panel" window.
 - ♥ The "Network Connections" window then opens.

SNetwork Connections			
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools Adva <u>n</u> ced <u>H</u> elp			an a
🕞 Back 🔻 💮 👻 🯂 👫 🛅 🏳 Search 🃂 F	olders]•	
Address 🔕 Network Connections			💌 🄁 Go
▲ Name	Туре	Status	Device Name
Network Tasks LAN or High-Speed Internet Create a new connection Local Area Connection Set up a home or small office network Local Area Connection 2 Change Windows Firewall settings Local Area Connection 2	LAN or LAN or LAN or	Network cable unplugged Disabled Network cable unplugged	NVIDIA nForce Networking Controller Cisco Aironet 802.11a/b/g Wireless Adapter Marvell Yukon 88E8053 PCI-E Gigabit Ethernet Controller
3 objects			11

Configuring the network properties of the LAN card

- 1. Click "LAN connection" with the right mouse button and select "Properties" from the context menu.
 - Solution The window with the Network Properties then opens.

Local Area Connection Properties
General Authentication Advanced
Connect using:
NVIDIA nForce Networking Controller
This connection uses the following items:
✓
Install Uninstall Properties
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
☐ Show icon in notification area when connected ✓ Notify me when this connection has limited or no connectivity
OK Cancel

- 2. Double-click on the "Internet Protocol (TCP/IP)" window.
 - Solution The window with the TCP/IP settings then appears.

Internet Protocol (TCP/IP) Propertie	s ? X
General	
You can get IP settings assigned autor this capability. Otherwise, you need to a the appropriate IP settings.	natically if your network supports ssk your network administrator for
O <u>O</u> btain an IP address automatical	y
□ Use the following IP address: —	
IP address:	192 . 168 . 230 . 235
S <u>u</u> bnet mask:	255 . 255 . 255 . 0
Default gateway:	· · ·
C Obtain DNS server address autor	natically
┌── Us <u>e</u> the following DNS server add	dresses:
Preferred DNS server:	· · ·
<u>A</u> lternate DNS server:	
	Ad <u>v</u> anced
	OK Cancel

- **3.** Change these settings as shown in the screenshot and confirm with the "Advanced" button.
 - ✤ The window for advanced settings appears.

	Advanced TCP/IP Settings	? X
	IP Settings DNS WINS Options	
	□ IP addresses	
	IP address Subnet mask 192.168.230.235 255.255.255.0	
A –	Add Edit Remove	
	Default gateways:	
	Gateway Metric	
	Add Edit Remove	
	I <u>n</u> terface metric:	
	OK Ca	ncel

- 4. Click the "Add" button (A).
 - ✤ The following window appears.

TCP/IP	Address				? >	×
<u>I</u> P addr	ess:	192 . 16	8.1	. 235		
<u>S</u> ubnet	mask:	255 . 25	5 . 255	. 0		
			<u>A</u> dd		Cancel	

- 5. Change these settings as shown in the screenshot and confirm with the "Add" button.
 - ✤ The following window appears.

Advanced TCP/IP Sett	ings			? ×
IP Settings DNS V	/INS Options			
				_
IP address		Subnet mask		
192.168.1.235		255.255.255.0		
	<u>A</u> dd	<u>E</u> dit	Remo <u>v</u> e	
De <u>f</u> ault gateways:				_
Gateway		Metric		
	A <u>d</u> d	Ediţ	Re <u>m</u> ove	
Automatic metric				
Interface metric:				
			1	
		OK	Ca	ncel

- 6. Confirm this window with "OK".
- 7. Confirm each of the two open windows with "OK".
- ✤ The LAN card is configured.

Go on to the chapter entitled "Configuring the access point".

2.2 Preparations for Windows Vista (as from HW Hx)

2.2.1 Deactivating the WLAN card

Opening network connections



1. Right click the network icon in the task bar and select "Network and Sharing Center".



- 2. Go to the "Network and Sharing Center" window and click "Manage network connections".
 - \mathbf{b} The window with the network connections then opens.



Deactivating the WLAN card

- 1. Right click "Wireless Network Connection".
- 2. Select "deactivate".

2.2.2 Configuring the network properties of the LAN card

Opening network connections



1. Right click the network icon in the task bar and select "Network and Sharing Center".



- 2. Go to the "Network and Sharing Center" window and click "Manage network connections".
 - Solution The window with the network connections then opens.



Configuring the network properties of the LAN card

- 1. Click "LAN connection" with the right mouse button and select "Properties" from the context menu.
 - Solution The window with the Network Properties then opens.

Preparations for Windows Vista (as from HW Hx)

Realtek RTL	8168/8111 Family F	CI-E Gigal	bit Ethernet NIC
		[Configure
This connection use	es the following item	s:	
Client for M	licrosoft Networks		
QoS Packe	et Scheduler		
File and Pri	inter Sharing for Mic	rosoft Net	works
	otocol Version 6 (10	P/IPV6)	
	Topology Discover	(Mapper I	/O Driver
Ink-Layer	Topology Discover	Respond	er .
I <u>n</u> stall	Uninstall		Properties
Description			
Transmission Cor	trol Protocol/Intern	et Protoco	I. The default
wide area networ	k protocol that prov	ides comm	nunication
wide area networ			

- 2. Double-click "Internet Protocol Version 4 (TCP/IPv4)".
 - Solution The window with the TCP/IPv4 settings then appears.

eneral	
You can get IP settings assigned this capability. Otherwise, you n for the appropriate IP settings.	automatically if your network supports eed to ask your network administrator
Obtain an IP address auton	natically
• Use the following IP addres	s:
IP address:	192 . 168 . 230 . 235
Subnet mask:	255.255.255.0
Default gateway:	к эс х
Obtain DNS server address	automatically
 Ogenine following DNS server 	er addresses:
Preferred DNS server:	
Alternate DNS server:	
	Advanced

- **3.** Change these settings as shown in the screenshot and confirm with the "Advanced" button.
 - ✤ The window for advanced settings appears.

A-	IP Settings DNS WINS		
	IP addresses		
	IP address	Subnet mask	
	192.168.230.235	255.255.255.0	
		Edit Remove	
	Default gateways:		
	Gateway	Metric	
	A <u>d</u> d	Edit Remove	
	Automatic metric		
	Interface metric:		

- 4. Click the "Add" button (A).
 - ✤ The following window appears.

IP address:	192 . 168 . 1 . 235	
<u>S</u> ubnet mask:	255 . 255 . 255 . 0	1
	Add	Cancel

- 5. Change these settings as shown in the screenshot and confirm with the "Add" button.
 - ✤ The following window appears.

Settings	DNS V	VINS		
IP add <u>r</u> e	sses			
IP add	dress		Subnet mask	
192.1 192.1	68.230.235 68.1.235		255.255.255.0 255.255.255.0	
		Add	<u>E</u> dit	Remo <u>v</u> e
Default	ateways:			
Gatev	vay		Metric	
		A <u>d</u> d	Edi <u>t</u>	Remove
Auto	matic metric	:		
Interfac	e metric:			

- 6. Confirm this window with "OK".
- 7. Confirm each of the two open windows with "OK".
- ✤ The LAN card is configured.

Go on to the chapter entitled "Configuring the access point" [1] 13].

3

Configuring the access point

NOTE: Access point configured at factory

The access point is configured at the factory. This chapter assists in restoring the default settings in the event of an error (e.g. access point was reconfigured).

You will need a 1:1 network cable to configure access point WAP54G. This cable is supplied with the access point.

National versions of access point	Part Number
WLAN access point, (EU, CH)	61 51 232
WLAN access point, USA	61 51 240
WLAN access point, GB	61 51 257
WLAN access point, AUS/NZ	61 51 281
WLAN access point, Japan	61 51 299



- 1. Connect the LAN port of the access point to a LAN port of the PC via a 1:1 network cable.
- 2. Connect the access point to the power supply.



- 3. Press the Reset button on the access point for 10 seconds.
- Click "Start" / "Programs" / "Internet Explorer".
 - Solution Content State Stat
- 1. Enter the following IP address in the Internet Explorer address line: 192.168.1.245

Connect access point

Log in at the access point

Opening the Internet Explorer

2. Press the Enter key on the keyboard.

The login window of the access point opens. If this window does not open, check to see if the PC has another LAN port. If so, plug the network cable into this LAN port. After that, reenter the IP address in the Internet Explorer address line and confirm by pressing enter.

User name:	£
Password:	Remember my password
	OK Cancel

- 3. Leave the input box "User name" empty and enter the text "admin" in the input box "Password". Make sure to use lower case.
- 4. Confirm with the "OK" button.
 - ✤ The access point setup menu appears.

Configuring the access point

- 1. Select the "Wireless" tab.
 - ✤ The Wireless menu appears.

LINKSYS [®] A Division of Cisco Systems, Inc.					Firm	ware Version: 3.05
				Wirele	ess-G Access Point	WAP54G
Wireless	Setup Wi	reless	Administration	Status		
	Basic Wireless Settings	1	Security	Wireless MAC Filter	Advanced Wireless	Settings
Basic Wireless Settings	Mode: Network Name(SSID): Channel: SSID Broadcast: Current Encryption	Mixed MCXLnet 1 - 2.4120 Enabled No Encryp Status: SE Reset	3Hz 💌 otion ES Inactive Security		<u>Help</u>	CISCO SYSTEMS
			Save Settings	Cancel Changes		مىناڭىيىيىناڭى،

Linksys basic settings

- 2. Change the settings as shown in the screenshot and then click the "Save Settings" button.
 - A message appears stating that your changes have been saved.

Your changes have been saved.

- **3.** Click the "Continue" button.
- 4. Select the "Security" tab.
 - ♥ The window with the WLAN security settings appears.

LINKSYS [®] A Division of Cisco Systems, Inc.					Fim	nware Version: 3.05
				Wireles	s-G Access Point	WAP54G
Wireless	Setup Wi	reless	Administration	Status		
	Basic Wireless Settings	1	Security	Wireless MAC Filter	Advanced Wireles:	s Settings
Security	Security Mode: Encryption: Passphrase: Key 1: Key 2: Key 3: Key 4: TX Key:	VVEP	-bit(26 hex digits) 💌	Generate	<u>Help</u>	<u>Cisco Systems</u>
			Save Settings	Cancel Changes		الاس

WEP encryption

- 5. Change the settings as shown in the screenshot and then click the "Save Settings" button.
 - Solution A message appears stating that your changes have been saved.
- 6. Click the "Continue" button.
- 7. Select the "Advanced Wireless Settings" tab.

LINKSYS® A Division of Cisco Systems, Inc.						Firm	ware Version: 3.05
					Wireles	s-G Access Point	WAP54G
Wireless	Setup Wir	eless	Administrati	ion	Status		
	Basic Wireless Settings	I	Security		Wireless MAC Filter	Advanced Wireless	Settings
Advanced Wireless	Authentication Type: Basic Rate: Transmission Rate: CTS Protection Mode: Frame Burst Mode: Antenna Selection: Beacon Interval: DTIM Interval: Fragmentation Threshold: RTS Threshold:	Open Syst Default Auto(Defa Disable Enabled Diversity 100 3 2346 2346	tem(Default)	lisecor ange: 1 - 2 ange: 2	nds, Range: 20~1000) 255) 256 - 2346) 256 - 2346)	Help	<u>Cisco Systems</u>
			Save Settin	ngs	Cancel Changes		ومتاليسيناليه

Linksys advanced settings

- 8. Change "CTS Protection Mode" to "Disable" and then click the "Save Settings" button.
 - ♥ A message appears stating that your changes have been saved.
- 9. Click the "Continue" button.
- 10. Select the "Setup" tab.

LINKSYS® A Division of Cisco Systems, Inc.					Firm	ware Version: 3.05
				Wireles	s-G Access Point	WAP54G
Setup	Setup	Wireless	Administration	Status		
	Network Setup	AP Mode				
Network Setup						
Device Name	Linksys WAP54G				<u>Help</u>	
Configuration Type	Static IP	*				
	IP Address : Subnet Mask : Default Gateway :	192 . 10 255 . 29	. 230 . 240 			
			······			Cisco Systems
			Save Settings	Cancel Changes		وببالسيبالس



- **11.** Change the settings as shown in the screenshot and then click the "Save Settings" button.
 - ♥ A message appears stating that your changes have been saved.
- 12. Click the "Continue" button.
 - ✤ The login window of the access point opens.
- 13. Close this window without making any changes.
- 14. Close the Internet Explorer window.
 - **b** The configuration of the access point is now completed.

Connecting the access point to the milling unit

Unplug the network cable from the PC and plug it into LAN port A of the milling unit.



4 Configuring the WLAN card of the PC

The CEREC system PC can be equipped with different operating systems.

Go on to the following pages depending on the operating system actually installed:



Go on to the chapter on "Configuring the PC in the infrastructure mode (Windows XP up to HW Gx)" [
18]



Go on to the chapter on "Configuring the PC in the infrastructure mode (Windows Vista as from HW Hx)" [[®] 26]

4.1 PC in the infrastructure mode (Windows XP up to HW Gx)

The acquisition units are equipped with two different WLAN cards.

You can see which WLAN card is installed by checking the manufacturer icon at the bottom right in the task bar.



Go on to the chapter entitled "Configuring the CISCO WLAN card" [
18].



Go on to the chapter entitled "Configuring the LINKSYS WLAN card" [
24].

4.1.1 Configuring the Cisco WLAN card

Opening network connections

- 1. Click "Start"/"Settings"/"Control panel" in the task bar.
- 2. Double-click the "Network Connections" icon in the "Control panel" window.
 - ♥ The "Network Connections" window then opens.

Setwork Connections				
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> o	ools Adva <u>n</u> ced <u>H</u> elp			an a
🕞 Back + 🕥 + 🏂 🐰	📋 📔 🔎 Search 🦻 Fo	lders]-	
Address 💊 Network Connections				💌 🔁 Go
	▲ Name	Туре	Status	Device Name
Network Tasks Image: Create a new connection Image: Create a new connection Image: Set up a home or small office network Image: Change Windows Firewall settings	LAN or High-Speed Internet	LAN or LAN or LAN or	Network cable unplugged Disabled Network cable unplugged	NVIDIA nForce Networking Controller Cisco Aironet 802.11a/b/g Wireless Adapter Marvell Yukon 88E8053 PCI-E Gigabit Ethernet Controller
3 objects				<i>II</i>

Activating the WLAN card

- 1. Right-click the "Wireless Network Connection" with the device name Cisco Aironet 02.11a/b/g Wireless Adapter.
- 2. Select "activate".
- 1. Right-click the "Wireless Network Connection" with the device name Cisco Aironet 02.11a/b/g Wireless Adapter.
- 2. Select "Properties".
 - **b** The window with the Network Properties then opens.

🚣 Wireless Network Connection Properties 🏾 🔋 🗙
General Wireless Networks Advanced
Connect using:
Cisco Aironet 802.11a/b/g Wireless Configure
This connection uses the following items:
QoS Packet Scheduler Gamma AEGIS Protocol (IEEE 802 1x) v3 2 0 3
Internet Protocol (TCP/IP)
Install Uninstall Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Notify me when this connection has limited or no connectivity
OK Cancel

- **3.** Double-click on the "Internet Protocol (TCP/IP)" window.
 - Solution The window with the TCP/IP settings then appears.

Configuring the network properties of the WLAN card

nternet Protocol (TCP/IP) Properti	es ?X
General	
You can get IP settings assigned auto this capability. Otherwise, you need to the appropriate IP settings.	matically if your network supports ask your network administrator for
O Obtain an IP address automatica	lly
□ _ ● Use the following IP address: —	
IP address:	192 . 168 . 230 . 230
S <u>u</u> bnet mask:	255 . 255 . 255 . 0
<u>D</u> efault gateway:	
C Obtain DNS server address auto	matically
□ — ● Use the following DNS server ac	ldresses:
Preferred DNS server:	
<u>A</u> lternate DNS server:	· · ·
	Advanced
	OK Cancel

- 4. Change these settings as shown in the screenshot.
- 5. Confirm each of the two open windows with "OK".
 - ♥ The network properties of the WLAN card are configured.
- Click "Start"/"Programs"/"Cisco Aironet"/"Aironet Desktop Utility".
 - ✤ The following window appears:

😤 Cisco Airone	et Desktop Utility	y - Current Profile: Default		?×
<u>A</u> ction <u>O</u> ptions	Help			
Current Status	Profile Management	Diagnostics		
CISCO SYSTEM	Profile Name:	Default		
	Link Status:	Associated		
	Wireless Mode:	2.4 GHz 54 Mbps	IP Address: 192.168.230	.230
	Network Type:	Infrastructure	Current Channel: 11	
Server B	ased Authentication:	None	Data Encryption: None	
	Signal Strength:	•	Poor	
			Advanced	

- 2. Select the "Profile Management" tab.
 - ✤ The following window appears:

Configuring the WLAN card

on Options Help		
rrent Status Profile Manageme	ent Diagnostics	
Sefault		<u>N</u> ew
		Modify
		Remo <u>v</u> e
		Activate
Details		
Network Type:	Infrastructure	Import
Security Mode:	Disabled	
Network Name 1 (SSID1):	<empty></empty>	<u>Export</u>
Network Name 2 (SSID2):	<empty></empty>	Scan
Network Name 3 (SSID3):	<empty></empty>	- Ogan

- 3. Click the "New" button.
 - ♥ The window for general configuration settings appears.

Profile Management	2 🛛
General Security Advance	ed
Profile Settings	
Profile Name:	MCXL_InfrStr
Client Name:	PCD30181
Network Names	
SSID1:	MCXLnet
SSID2:	
SSID3:	
	OK Abbrechen

Configuring the infrastructure mode

- 4. Enter the following text: "Profile Name" field: "MCXL_InfrStr" "SSID1" field:"MCXLnet".
- 5. Select the "Security" tab.
 - ✤ The window for security settings appears.

- 6. Click the "Pre-Shared Key (Static WEP)" option button and then the "Configure" button.
 - ✤ The WLAN encryption window then appears.

Define Pre-Shared Keys	? 🛛
Key Entry O Hexadecimal (0-9, A-F) O ASCII Text (all keyboard of the second seco	characters)
Encryption Keys Transmit Key	WEP Key Size: 40 128
WEP Key 1: • 3456789ABCDEFFEDCBA9876543	0 0
WEP Key 2: 0	⊙ ⊙
WEP Key 3: O	\odot \bigcirc
WEP Key 4: O	\odot \bigcirc
	IK Cancel

WLAN encryption in the infrastructure mode

- 7. Change the settings as shown in the screenshot and confirm with "OK".
- 8. Select the "Advanced" tab.
 - ✤ The window for the advanced settings appears.

Transmit Power Level	Power Save Mode:	CAM (Constantly Av	wake Mode)
802.11b/g: 100 mW 🔽	Network Type:	Infrastructure	
802.11a: 40 mW	802.11b Preamble:	📀 Short & Long	🔵 Long Only
Wireless Mode	- Wireless Mode When Startin	g Ad Hoc Network -	
🗹 2.4 GHz 54 Mbps			
🗹 2.4 GHz 11 Mbps	🔿 2.4 GHz 11 Mbps		
	🔿 2.4 GHz 54 Mbps	Channel	: Auto 💌
	802.11 Authentication Mode		
	🔿 Auto 💿 O	lpen 🤇) Shared

Advanced settings in the infrastructure mode

9. Change the settings as shown in the screenshot and confirm with "OK".

✤ The following window appears.

🖻 Cisco Aironet Desktop Uti	lity - Current Profile: MCXL_InfrStr	? 🛛
<u>A</u> ction Options <u>H</u> elp		
Current Status Profile Manageme	nt Diagnostics	
Default		<u>N</u> ew
MCXL_InfrStr		Modify
		Remove
		Activate
- Details		
Network Type:	Infrastructure	Import
Security Mode:	Pre Shared Key	
Network Name 1 (SSID1):	MCXLnet	<u>Export</u>
Network Name 2 (SSID2):	<empty></empty>	Scan
Network Name 3 (SSID3):	<empty></empty>	<u>Jean</u>
Auto Select Profiles		Order Profiles

Activating profile in the infrastructure mode

- 10. Select the "MCXL InfrStr" profile.
- 11. Click the "Activate" button.
- 12. Close all open windows.

Solution was successful, a green CISCO icon appears in the toolbar.

If the milling unit is equipped with an **access point**, go on to: "Final work" [**B** 37]

NOTE: Milling unit with an internal WLAN module If the milling unit is equipped with an internal WLAN module, go on to: "Configuring the WLAN module of the milling unit (if installed)" [**B** 30]



4.1.2 Configuring the Linksys WLAN card

Opening network connections

- 1. Click "Start"/"Settings"/"Control panel" in the task bar.
- 2. Double-click the "Network Connections" icon in the "Control panel" window.
 - Some the "Network Connections" window then opens.



Activating the WLAN card

Configuring the WLAN card



1. Double-click the Linksys icon in the toolbar.

name ... Wireless-G PCI

Select "activate".

2.

Solution The following window appears. Its contents may vary depending on the preconfiguration and/or the hardware version of the PC.

1. Right-click the "Wireless Network Connection" with the device

LINKSYS A Division of Cisco Systems, Inc.			0
Link Information	Site Survey	Profiles	
More Information	Infrastruc	ture Mode	9 4 GHz
		Internet	L_
Signal Strength		Link Quality	Adapter is Active
Wireless-G P	CI Adapter	Wireless Network Monitor v1.0	Model No.: WMP54GR

- 2. Select the "Profiles" tab.
 - ✤ The following window appears.



3. Select the "MCXL_InfrStr" profile (B).

UNOTE: If the profile is not available

If you cannot find the "MCXL_InfrStr" profile, click "Import". A file selection dialog box then appears. Change to the directory "c:\sirona\drivers\wlanlinksys" and double-click the file "MCXL_InfrStr.cfg".

- 4. Click the "Connect" button.
- 5. Following a successful connection, a window opens. If necessary, click "Link Information" to view the window shown below.



- 6. Make no changes and close the window.
 - Solution of the WLAN card is now completed.

If the milling unit is equipped with an **access point**, go on to: "Final work" [**B** 37]

WOTE: Milling unit with an internal WLAN module If the milling unit is equipped with an internal WLAN module, go on to: Configuring the WLAN module of the milling unit (if present) [**B** 30]

4.2 Configuring the PC in the infrastructure mode (Windows Vista as from HW Hx)

Opening network connections



1. Right click the network icon in the task bar and select "Network and Sharing Center".



- 2. Go to the "Network and Sharing Center" window and click "Manage network connections".
 - ♥ The window with the network connections then opens.



Deactivating the WLAN card

Configuring the network properties of the WLAN card

- 1. Right click "Wireless Network Connection".
- 2. Select "activate".
- 1. Right click "Wireless Network Connection" and select "Properties" from the context menu.
 - **b** The window with the Network Properties then opens.

	aring		
Connect using:			<u> </u>
🔮 Linksys	Wireless-G P	Cl Network Ada	pter with SpeedBoost
			Configure
This connection	n uses the fo	llowing items:	
Client	for Microsoft	Networks	
🗹 🗐 Qo S F	acket Sche	duler	
🗹 📙 File ar	nd Printer Sha	aring for Microso	oft Networks
🗹 🔺 Intern	et Protocol V	ersion 6 (TCP/II	Pv6)
🗹 🔺 Intern	et Protocol V	ersion 4 (TCP/II	Pv4)
🗹 🔺 Link-L	ayer Topolog	gy Discovery Ma	apper I/O Driver
🗹 🔺 Link-L	ayer Topolog	gy Discovery Re	sponder
-125 2502502 A			1000 AUG 400
Install		Uninstall	Properties
Install		<u>U</u> ninstall	Properties
Install Description	Control Prot	Uninstall	Properties
Description Transmission wide area ne	Control Protection	Uninstall tocol/Internet Pr col that provides	otocol. The default
Install Description Transmissior wide area ne across divers	Control Prot etwork protoc se interconne	Uninstall tocol/Internet Pr col that provides acted networks.	otocol. The default
Install Description Transmissior wide area ne across diver	Control Prot stwork protoc se interconne	Uninstall tocol/Internet Pr col that provides ected networks.	Properties

- 2. Double-click "Internet Protocol Version 4 (TCP/IPv4)".
 - **b** The window with the TCP/IPv4 settings then appears.

You can get IP settings assigned this capability. Otherwise, you n for the appropriate IP settings.	d automatically if your network supports need to ask your network administrator
Obtain an IP address autor	matically
() Use the following IP addres	ss:
IP address:	192 . 168 . 230 . 230
Subnet mask:	255.255.255.0
Default gateway:	K (20) (20)
Obtain DNS server address	s automatically
 Use the following DNS serv 	ver addresses:
Preferred DNS server:	
Alternate DNS server:	
	Ad <u>v</u> anced

- 3. Change the settings as shown in the screenshot.
- 4. Confirm each of the two open windows with "OK".
 - ♥ The network properties of the WLAN card are configured.

Configuring the WLAN card

- 1. Right click the network icon in the task bar and select "Connect to a network".
 - Solution with the WLAN networks located nearby then opens.
- 2. Click the "MCXLnet" WLAN network; then click the "Connect" button.

A window with the message "Connecting to MCXLnet" briefly opens. The window for entering the encryption key then appears.

0	P Connect to a network	
	Type the network security key or passphrase for MCXLnet	
	The person who setup the network can give you the key or passphrase.	
	Security key or passphrase:	
	3456789abcdeffedcba9876543	
	☑ Display characters	
	If you have a USB flash drive with network settings for MCXLnet, insert it now.	
	Connect	Cancel

3. Change the settings as shown in the screenshot. Click the "Connect" button.

Solution A window with the message "Connecting to MCXLnet" briefly opens. The following window then appears.

Connection unsuce	essful	
This computer is conne	ted to MCXLnet but does not have acce	ss to the internet.
- This might be caused	y an incorrect WEP key or low wireless s	ignal strength.
- If you are connecting t connecting.	o a wireless hotspot, you might need to	open a web browser to finish
Diagnose the problem		
Save this network		
Start this connec	tion automatically	

UNOTE: No internet connection

The message "Connection unsuccessful" only means that no internet connection is available. The connection to the access point is established.

After a successful connection, the red "x" on the network icon disappears. You can ignore the yellow warning triangle on the network icon.

4. Click the "Close" button.

If the milling unit is equipped with an **access point**, go on to: "Final work" [**B** 37]

NOTE: Milling unit with an internal WLAN module If the milling unit is equipped with an internal WLAN module, go on to: "Configuring the WLAN module of the milling unit (if installed)" [**B** 30]

5 Configuring the WLAN module of the milling unit (if present)

The configuration described below is only possible with milling units with an internal WLAN module. Sirona generally recommends connecting the access point to the milling unit via the network cable.



Connecting the PC to the milling unit



Connection between a PC and a milling unit.

Connect the WLAN port of the milling unit to the LAN port of a PC via a crossover network cable (Order no. 60 06 626).

WOTE: Connection via a network cable Use the WLAN configuration cable included in the scope of supply (Order no. 61 50 994) for milling units up to and including serial number **103000**.

Opening the Internet Explorer

Click "Start" / "Programs" / "Internet Explorer".

Solution The Internet Explorer window opens.

IP address of the milling unit WLAN module

The IP address of the milling unit WLAN module is the sum of the milling unit IP address plus 100.

The IP address of the milling unit appears on the display after you switch the milling unit on by pressing the "Config" button.

Example:

IP address of milling unit	192.168.230	.120
		+100
IP address of WLAN module	192.168.230	.220

WOTE: New WLAN module or reset performed After installing a new WLAN module or resetting the WLAN module, you must use the following IP address: **192.168.1.226**

Login of the milling unit WLAN module

- 1. Enter the IP address of the milling unit WLAN module in the address line of the Internet Explorer window.
- 2. Press the Enter key on the keyboard.

Solution The login window of the milling unit WLAN module then opens. If this window does not open, check to see if the PC has another LAN port. If so, plug the network cable into this LAN port. After that, reenter the IP address in the Internet Explorer address line and confirm by pressing enter.

Connect to 192.168	.230.220
	G A
Linksys WET54G	
<u>U</u> ser name:	2
Password:	
	Remember my password
	OK Cancel

- 3. Enter "admin" both as the user name and as the password.
- 4. Confirm with the "OK" button.
 - ✤ The following window appears.

LAN	Firmware: MAC Address:	v2.03, May 12, 2006 ETSI 00: 01: 02: DD: 56: F5				
LAN	Device Name:	NSM You may specify a device name up to 19 characters long.				
	Configuration Type:	 Automatic Configuration - DHCP Static IP Address: 				
		IP Address: 192 . 168 . 230 . 220				
		Subnet Mask: 255 . 255 . 0				
		Gateway: 0 . 0 . 0				
		The above settings will not be applied if Automatic Configuration - DHCP is selected.				
Wireless						
	SSID:	MCXLnet Site Survey Search for available wireless network(s).				
	Network Type:	Infrastructure 👻 Channel: 6 🗹 Mode: 802.11b/g Mixed 🗸				
	Security:	⊙Enable				
		Note: All devices must use the same settings in order to communicate.				
		Apply Cancel Help				

Linksys setup infrastructure mode

Configuring the WLAN module

- ✓ The login for configuration of the milling unit was successful and the Setup window shown above appears. Its contents may vary from one configuration to another.
- 1. Click the "Edit Security Settings" button.
 - ✤ The "Security" window appears.

WIRELESS	LINKS A Division of Cisco S	SYS [®] lystems, Inc.	
	Security		
	Make sure that a level and Key, a click the Refresh	II wireless devices on your 2.4GHz (802.11g) network are using the same encryptio s defined below. If this page doesn't refresh automatically after you olick Apply, the button of your web browser.	n èn
	Security Mode:	WEP	
	Default Transmit Key: WEP Encryption:	 ● 1 ● 2 ● 3 ● 4 128-Bit (26 hex digits) 	
	Passphrase: Key 1: Key 2: Key 3: Key 4:	Generate 3456789abcdeffedcba9876543	
	Ethe Model	Processe G ernet Bridge WEB Configuration Utility Cisco Systems No. WET54G	

Linksys security infrastructure mode

- **2.** Change the settings for the infrastructure mode as shown in the screenshot.
- **3.** Confirm with the "Apply" button.
 - ♥ The settings are stored by the WLAN module.
- 4. Close the window at the end of the waiting period.
- 5. Select the "Advanced" tab.
 - So The "Advanced" window appears.

WIRELESS	LINKS A Division of Cisco Sy	BYS [®] istems, Inc.					
	Advanced		Setup Password Adv	vanced Status Help			
	Use this page to co Click the Apply but These settings shou	nfigure the advanced se ton at the bottom of the Ild only be modified by	ttings for your 2.4GHz (802.11g) wirel page to save your changes. advanced users.	iess network.			
Advanced Wireless	Transmission Rate: (Default: Auto)						
	Authentication Type:	Open 🛛 🝸 (Defa	ult: Open)				
	RTS Threshold:	2347 (Default	: 2347, Range: 0 - 2347)				
	Fragmentation Threshold:	2346 (Default	: 2346, Range: 256 - 2346)				
MAC Address							
	Cloning Mode:	Enable 💌 💿 Auto	O Manual> - Enter MAC Address:	00:01:02:DD:56:F5			
	Note: When in Auto mode, the Bridge will use the MAC Address of the the Ethernet port. Choose Manual if more than one device will be conn and you want to clone the MAC Address of a specific device.						
SNMP	i.						
	SNMP V1/V2c	Disable 💌					
	SNMP Community:	public private	Read-Only V				
	1						
	(Apply Cancel	Help				
	Wi	reless- G					
	Ethe	rnet Bridge wa	B Configuration Utility	CISCO SYSTEMS			
	Model I	No. WET54G		<u>اللىسىنالى</u>			

Advanced window

- 6. Change the settings as shown in the screenshot.
- 7. Confirm with the "Apply" button.
 - ₲ The settings are stored by the WLAN module.
- 8. Select the "Setup" tab.

	Firmware:	v2.03, May 12, 2006 ETSI			
	MAC Address: 00: 01: 02: DD: 56: F5				
LAN		1			
	Device Name:	NSM You may specify a device name up to 19 characters long.			
	Configuration Type:	 Automatic Configuration - DHCP Static IP Address: 			
		IP Address: 192 . 168 . 230 . 220			
		Subnet Mask: 255 . 255 . 0			
		Gateway: 0 . 0 . 0			
		The above settings will not be applied if Automatic Configuration - DHCP is selected.			
Wireless		l de la construcción de la constru			
wireless					
	SSID:	MCXLnet Site Survey Search for available wireless network(s).			
	Network Type:	Infrastructure V Channel: 6 V Mode: 802.11b/g Mixed V			
	Security:	Enable Obisable Edit Security Settings			
		Note: All devices must use the same settings in order to communicate.			
		Apply Cancel Help			

Linksys setup infrastructure mode

CAUTION: Change the IP address only in the following cases:

new WLAN module or reset performed

After installing a new WLAN module or resetting the WLAN module, you must determine the IP address and enter it into the fields "IP Address:".

The IP address of the milling unit WLAN module is the sum of the milling unit IP address plus 100.

The IP address of the milling unit appears on the display after you switch the milling unit on by pressing the "Config" button.

Example:

IP address of milling unit: 192.168.230.120

IP address of WLAN module: 192.168.230.220

- 9. Change the remaining settings as shown in the screenshot.
- 10. Click the "Apply" button.
- **11.** Close all open windows at the end of the waiting period.
 - Solution to the configuration is now completed.
- 12. Remove the LAN cable.
- **13.** Connect the LAN port to the WLAN port via a **1:1 network cable** (Order no. 61 17 563).



14. Switch the milling unit off and on again.

6 Final work

6.1 Switching the units off and on again

- 1. Shut down the PC and switch it off.
- 2. Switch the milling unit and the access point off.
- 3. Switch the PC, milling unit and access point back on.

The configuration of the PC and the milling unit in the infrastructure mode is completed.

6.2 Connection test via ping command

The CEREC system PC can be equipped with different operating systems.

Go on to the following pages depending on the operating system actually installed:



Go on to the chapter on "Connection test via ping command (Windows XP up to HW Gx)"



Go on to the chapter on "Connection test via ping command (Windows Vista as from HW Hx)"

6.2.1 Connection test via ping command (Windows XP up to HW Gx)

1. Click "Start" / "Run" in the task bar.

Run	? ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	cmd
	OK Cancel Browse

DOS prompt

- 2. Enter "cmd" in the following window.
- 3. Confirm with "OK".
 - ✤ The DOS prompt window then opens.

CAUTION: The IP address is only an example

The IP address in the next screenshot is only an example. The IP address of the milling unit appears on the milling unit display when, after turning the unit on, you press the "Config" key.

4. Enter the command "ping", followed by a space and the IP address of the milling unit.



Example ping command

5. Press the Enter key.

b If the connection is intact, the display should have the following contents.

🔤 C:\WINDOWS\system32\cmd.exe	- 🗆 🗙
Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp.	_
C:\Documents and Settings\CADCAM>ping 192.168.230.226	
Pinging 192.168.230.226 with 32 bytes of data:	
Reply from 192.168.230.226: bytes=32 time=2ms TTL=255 Reply from 192.168.238.226: bytes=32 time(1ms TTL=255 Reply from 192.168.230.226: bytes=32 time(1ms TTL=255 Reply from 192.168.230.226: bytes=32 time<1ms TTL=255	
Ping statistics for 192.168.230.226: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 2ms, Average = 0ms	
C:\Documents and Settings\CADCAM>_	
	-

- 6. Close the DOS prompt window.
- 7. Go on to the chapter entitled "Analyzing the connection quality in infrastructure mode" [2] 40].

6.2.2 Connection test via ping command (Windows Vista as from HW Hx)

1. Click "Start" in the task bar and enter the command "cmd".



- 2. Confirm with the "Enter" key.
 - ✤ The DOS prompt window then opens.

CAUTION: The IP address is only an example

The IP address in the next screenshot is only an example. The IP address of the milling unit appears on the milling unit display when, after turning the unit on, you press the "Config" key.

3. Enter the command "ping", followed by a space and the IP address of the milling unit.



4. Press the Enter key.

 $\boldsymbol{\boldsymbol{\xi}}$ If the connection is intact, the display should have the following contents.



- 5. Close the DOS prompt window.
- 6. Go on to the chapter entitled "Analyzing the connection quality in infrastructure mode" [**B** 40].

6.3 Analyzing the connection quality in Infrastructure Mode

Analyzing the WLAN connection quality is essential for the optimal wireless operation of the CEREC system. Merely observing the WLAN signal strength using appropriate software tools is not enough to provide information concerning the connection quality. In particular, the utilization of the set WLAN channel is critical here.

The occurrence of weak communications despite good signal strength points to an overloaded WLAN channel.

Switch off the PC, access point and the milling unit.



- 1. Position the PC near the access point (1-2 m away).
- 2. Switch the PC, access point and the milling unit on.

Performing the communication test

CAUTION: Use only the test "Serial communication" The service software is intended as a resource for the service engineer. Without service engineer training, you should use only the described test for serial communication.

1. Open the Service menu as follows. CEREC MC XL:

"Start"/"Programs"/"CEREC"/"Service" inLab MC XL: "Start"/"Programs"/"inLab"/"Service"

♥ The Service Login dialog box then opens for password entry.

0	Improper use of service functions may result in damage.
Service only	For this reason, only specially trained personnel are allowed to use the service functions!
Are	you sure that you want to use the service functions ?
	Password

- 2. Enter the current month and day in reverse order in the "Password" box. Example: 24.05 => 5042
- 3. Confirm your selection with the "Yes" button.
- 4. If several milling units are connected, a dialog box will appear. Select the language you prefer and confirm your choice with "OK".
 - ♥ The "Test selection" dialog box appears.

Test selection
Selected milling unit
Behandlungsplatz 2 S/Nr:000000100105
C Total test
Serial communication
⊂ Media supply
C Light barriers, door switch, temperature sensor, motor stop position
© Stepping motors - test
© Stepping motors - single step
Stepping motor step response
C DC motors 'Load/inlet'
⊂ DC motors 'Touch'
⊂ DC motors 'Speed'
⊂ Sensor test
 Force sensor test
Continuous load
C Sensor adjustment
C Camera adjustment and acceptance
C Camera quick test
Milling unit info
OK Exit
Test selection

l est selection

- 5. Click the "Serial communication" button and confirm with "OK".
 - ✤ The Communication Test window opens.

Communication	×
Test course Number of test runs: 54 Current state of the test run:	
Effective data transfer time:	
Current: 250 ms	
Minimum: 234 ms Average: 249 ms	
Maximum: 266 ms	
]
Passed rully 54 Passed 0 Not passed 0	
Start Stop Back Save	

Communication

- 6. Click the "Start" button.
- 7. Stop the test after approx. 50 test runs. Click the "Stop" button.

The average data transmission time should be less than 500ms; otherwise you must change channels (see "Changing channels in the Infrastructure mode" [**1** 43]).

6.4 Changing channels in the infrastructure mode



Changing channels is performed centrally at the access point in the Infrastructure mode. The acquisition unit and the milling unit then automatically obtain the current channel from the access point.

Opening the Internet Explorer

- > Click "Start" / "Programs" / "Internet Explorer".
 - ✤ The Internet Explorer window opens.

Log in at the access point

- 1. Enter the following IP address in the Internet Explorer address line: 192.168.230.240.
 - ✤ The login window of the access point opens.

<u>r</u> assword.	Remember my password
	OK Cancel

- 2. Leave the input box "Benutzername:" **empty** and enter the text "admin" in the input box "Kennwort:". Make sure to use lower case.
- **3.** Confirm with the "OK" button.
 - ♥ The access point setup menu appears.

LINKSYS [®] A Division of Cisco Systems, Inc.					Firm	ware Version: 3.05
				Wireless	-G Access Point	WAP54G
Setup	Setup	Wireless	Administration	Status		
	Network Setup	AP Mode				
Network Setup Device Name	Linksys WAP54G				<u>Help</u>	
Configuration Type	Static IP	~				
	IP Address : Subnet Mask : Default Gateway :	192 . 16 255 . 25 192 . 16	8 . 230 . 240 15 . 255 . 0 18 . 1 .			
			Save Settings	Cancel Changes		Cisco Systems aulliumaillium

Changing channels

- 1. Select the "Wireless" tab.
 - ✤ The Wireless menu appears.

LINKSYS [®] A Division of Cisco Systems, Inc.						Fim	ware Version: 3.05
				v	Vireless-	G Access Point	WAP54G
Wireless	Setup Wi	reless	Administration	n Status			
	Basic Wireless Settings	1	Security	Vireless MAC	C Filter	Advanced Wireles:	s Settings
Basic Wireless Settings	Mode: Network Name(SSID): Channel: SSID Broadcast: Current Encryption	Mixed MCXLnet 1 - 2.4120 2 - 2.4170 3 - 2.4220 4 - 2.4276 5 - 2.4320 6 - 2.4370 7 - 2.4420 8 - 2.4420 9 - 2.4520 10 - 2.4570 11 - 2.4670 12 - 2.4670 13 - 2.4720	Hz Hz Hz Hz Hz Hz Hz Hz Hz Hz Hz Hz Hz H			Help	Cisco Systems
			Save Setting	s Cancel Cha	anges		ավիստուլիստ

Changing channels

NOTE: Country-specific channel change

The number of channels available is country-specific.

- 2. Change to a new channel and then click the button "Save Settings"
 - ✤ Another dialog box opens.
- 3. Click the "Continue" button.
 - ✤ The channel change is now completed.

We reserve the right to make any alterations which may be required due to technical improvements.

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