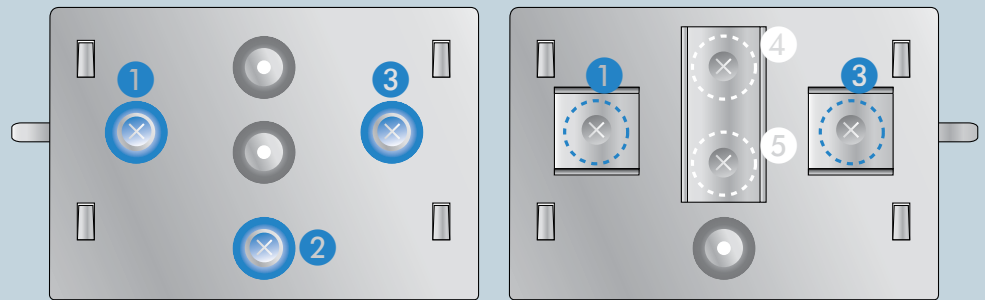




...connecting your business

# LANCOM IAP-3G LANCOM IAP-321-3G

## Hardware Quick Reference



### Wall mounting

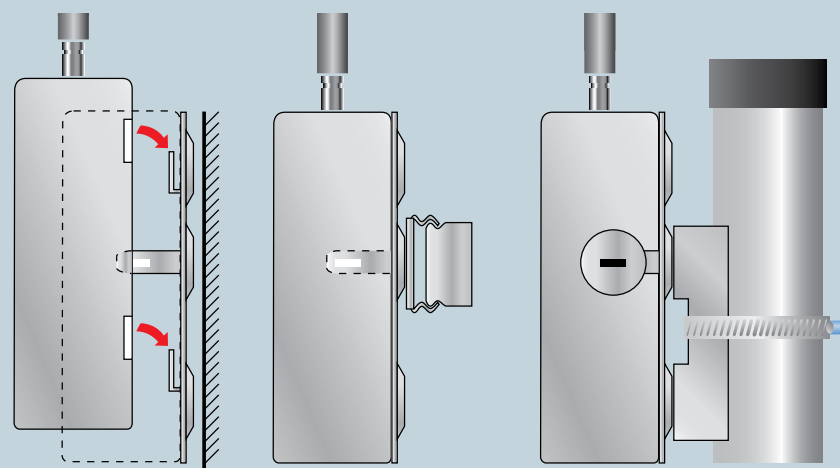
Use the supplied screws to fix the back plate to the wall using the holes 1, 2 and 3.

### Top-hat rail mounting

Using the supplied screws, attach the two top-hat rail clips to the holes 1 and 3. Do not yet tighten the screws completely; leave some play to adjust the alignment of the clips.

### Mast mounting

For mast mounting, use the supplied screws to fix the clamp profile through the holes 4 and 5.



Align the four openings on the rear of the device housing with the clips on the base plate and snap-fit the device.

### Top-hat rail mounting only

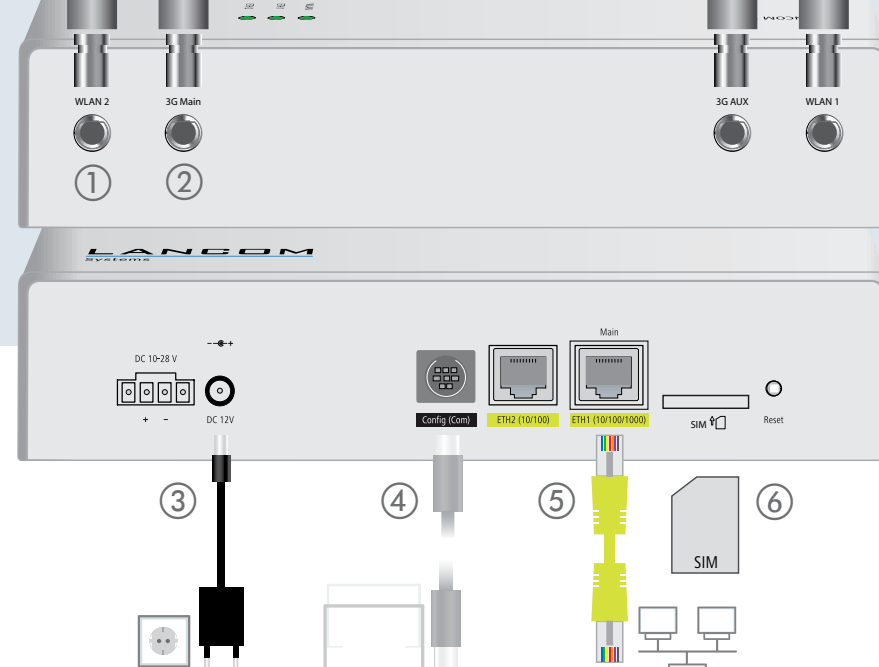
Snap the two top-hat rail clips onto the required position on the top-hat rail.

### Mast mounting only

Insert the supplied worm-drive clip (or one suitable for your pole diameter) around the mounting clamp profile. Finally, adjust the worm-drive clip to fix the device in the desired position on the mast.

### Optional: secure with a Kensington lock

The left side of the device features a slot for a Kensington lock. The Kensington lock securely fixes the device to the mounting plate.



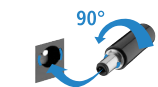
### 1 Optional: Wireless LAN antennas

Screw the WLAN antennas supplied to the connectors Ant1 and Ant2. Depending on the antenna ports, you may have to configure the 'Antenna grouping' parameter.

### 2 Optional: 3G antennas and GPS antenna

Screw the two supplied cellular antennas onto the connectors 3G Aux and 3G Main. Alternatively, screw the GPS antenna (available at no charge) to the connector 3G Aux (see voucher supplied).

**3 Power**  
When connecting the cable to the device, turn the bayonet connector 90° clockwise until it clicks into place.



Use only the supplied power adapter. Alternatively, connect the two free pins of the Combicon connector with a voltage source in the range 10 - 28 V DC.

**4 Optional: Serial configuration cable:**  
Connect the device to a PC with a configuration cable (available as accessory).

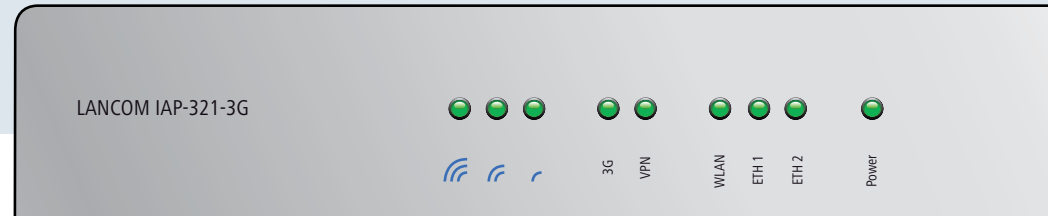
**5 Optional: LAN**  
Use the cable with the green-colored connectors to connect one of the interfaces ETH1 or ETH2 to your PC or a LAN switch.

**6 Optional: SIM card**  
Slide the SIM card into the slot using the marker to ensure that the card is the right way round. Ensure that the SIM card clicks into place on insertion. To remove the card from the device again, press the card lightly into the device. Let go to release the SIM card from the slot. The SIM card slot can be locked by attaching the cover plate with two screws.

**!** The SIM may only be inserted or removed with the device switched off. Inserting or removing the SIM card while the device is switched on could destroy the 3G module!

**!** If you operate separately purchased antennas, please ensure that you do not exceed the maximum allowed transmission power for your system. The system operator is responsible for adhering to the threshold values. For information about calculating the correct antenna setup, please refer to [www.lancom.eu](http://www.lancom.eu). Antennas are only to be attached or changed when the device is switched off. Mounting or demounting antennas while the device switched on may cause the destruction of the WLAN module!

## MOUNTING AND CONNECTING THE DEVICE



### 1 Signal strength

All LEDs off	No WWAN connection
LEDs constant red	No reception
One LED constant green	Low signal strength, field strength less than 87 dB
Two LEDs constant green	Medium signal strength, field strength 86 - 71 dB
Three LEDs constant green	Good signal strength, transmission mode stable, field strength greater than 71 dB

### 2 3G

Off	3G interface off
Slow blinking in green	Initializing and signing on to the cellular network
Green on (permanently)	Logon to cellular network successful, 3G interface ready
Fast blinking in green	Error

### 3 VPN

Off	VPN connection inactive
Green on (permanently)	VPN connection active
Blinking green	Establishing VPN connections

### 6 Power

Off	Device switched off
Green on (permanently)	Device operational
Blinking red/green	Configuration password not set. Without a configuration password, the configuration data in the device is unprotected.
Blinking red	Charge or time limit reached

### 5 ETH 1 and ETH 2

Off	No networking device attached
Green on (permanently)	Connection to network device operational, no data traffic
Flickering green	Data traffic

### 4 WLAN (optional)

Off	No WLAN network defined or WLAN module is not transmitting beacons.
Green	At least one WLAN network is defined and WLAN module is activated. The WLAN module is transmitting beacons.
Green inverse flashing	Number of flashes = number of connected WLAN stations and P2P wireless connections, followed by a pause (default). Alternatively the frequency of the flashing can indicate signal strength over the defined P2P link or the signal strength between the access point and the device operating in client mode.
Blinking green	DFS scanning or other scan procedure.

License information for the device firmware (LCOS) is available in the file LCOS-Licenses.txt on the data medium supplied.

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Hardware		
Power supply	12 V DC, external power adapter (230V) with bayonet connector to secure against disconnection 24 V DC, input voltage range 10 - 28 V	When choosing your power supply, please ensure that any components employed – where required – must also be suitable for extended temperature ranges.
Environment	Temperature range -20 – +50 °C; humidity 0-95%; non-condensing	
Housing	Robust metal housing, IP 50 protection class, for wall, mast and top-hat rail mounting, 21 cm x 15.2 cm x 4.5 cm (length/width/depth), weighs approx. 1.1 kg (without mounting materials)	
WLAN (optional)		
Frequency band	2.4 GHz or 5 GHz, 2400-2483.5 MHz (ISM) or 5150-5825 MHz (restrictions vary between countries)	
Transmission rates, 802.11b/g	54 Mbps as per IEEE 802.11g (fallback to 48, 36, 24, 18, 12, 9, 6 Mbps, automatic rate selection) compatible to IEEE 802.11b (11, 5.5, 2, 1 Mbps, automatic rate selection), 802.11 b/g compatibility mode or pure g or pure b	
Transmission rates, 802.11a/h	54 Mbps as per IEEE 802.11a/h (fallback to 48, 36, 24, 18, 12, 9, 6 Mbps, automatic rate selection), full compatibility with TPC (adjustable power output) and DFS (automatic channel selection, radar detection) as per ETSI EN 301 893 V. 1.5.1., EN 302 502	
Transmission rates, 802.11n	300 Mbps as per 802.11n with MSC15 (fallback to 6.5 Mbps with MSC0). Settings for 802.11 a/g/n compatibility mode or pure g, pure a, pure n, 802.11n/g, 802.11n/a	
Output power at the radio module, 5 GHz	802.11a/h: 17 dBm @ 6 to 24 Mbps, 15 dBm @ 36 Mbps, 13 dBm @ 54 Mbps, 802.11n: 17 dBm @ 6.5/13/30 Mbps (MCS0/8), 13 dBm @ 65/130/300 Mbps (MCS7/15)	
Minimum transmission power	Transmission-power reduction in software by 1dB steps to min. 0.5 dBm	
Reception sensitivity 2.4 GHz	802.11b: -89 dBm @ 11 Mbps, -94 dBm @ 1 Mbps 802.11g: -93 dBm @ 6 Mbps, -79 dBm @ 54 Mbps 802.11n: -93 dBm @ 6.5 Mbps (MCS0/8), -75 dBm @ 65 Mbps (MCS7/15)	
Reception sensitivity 5 GHz	802.11a/h: -93 dBm @ 6 Mbps, -75 dBm @ 54 Mbps 802.11n: -93 dBm @ 6.5 Mbps (MCS0/8), -71 dBm @ 65 Mbps (MCS7/15)	
Radio channels 2.4 GHz	Up to 13 channels, max. 3 non-overlapping (2.4-GHz band)	
Radio channels 5 GHz	Up to 26 non-overlapping channels (channels available vary according to country regulations; DFS for automatic dynamic channel selection required)	
Interfaces		
WAN port	10/100 Base-TX, pre-configured WAN port, re-configurable to LAN port	
LAN port	10/100/1000 Base-TX, pre-configured LAN port, re-configurable to WAN port	
External antenna connectors	Two reverse SMA connectors for external LANCOM AirLancer Extender antennas or for antennas from other vendors (IAP-321-3G only).	
External antenna connectors	Two SMA antenna connectors for external UMTS antennas (RX diversity) or for operating a GPS antenna at the AUX connector	
Serial interface	Serial configuration interface / COM port (10-pin connector): 19,200 - 115,000 baud	
UMTS modem		
Supported standards:	UMTS, HSPA+ (HSPA with up to 21 Mbps, HSUPA with up to 5.76 Mbps), EDGE and GPRS support	
UMTS HSxPA bands	850/900/1900/2100 MHz	
EDGE GPRS bands	850/900/1800/1900 MHz (EDGE to max. 236 kbps)	
Declaration of conformity		
CE	EN 60950, EN 301893 V 1.5.1 is currently in preparation, EN 55022	
UL	UL-2043 is currently in preparation	
Notifications	Certifications notified in Germany, Belgium, Netherlands, Luxembourg, Austria, Spain, Switzerland, UK, Italy, Portugal, Czech Republic, Denmark, France	
Package content		
Manual	Hardware Quick Reference (DE/EN), Installation Guide (DE/EN/FR/ES/IT/PT/NL)	
CD/DVD	CD/DVD with firmware, management software (LANconfig, LANmonitor, LANCAPI) and documentation	
Cable	Ethernet cable, 3m	
Combicon connector	For connection to a power supply ranging from 10 - 28 V DC	
Mounting	Mounting kit for wall, mast and top-hat rail mounting, plus an Ethernet- and SIM card-slot cover	
Antennas	Two 2 dBi dipole UMTS/GPRS antennas	
Antennas	Two 3-dBi dipole dual-band antennas (for IAP-321-3G only)	
Antennas	Passive GPS antennas can be ordered free of charge with the voucher supplied	
Power adapter	External power supply adapter (230V), NEST 12 V/1.5 A DC/S, barrel connector 2.1/5.5 mm bayonet, temperature range -5 – 45°C, LANCOM item no. 110829	