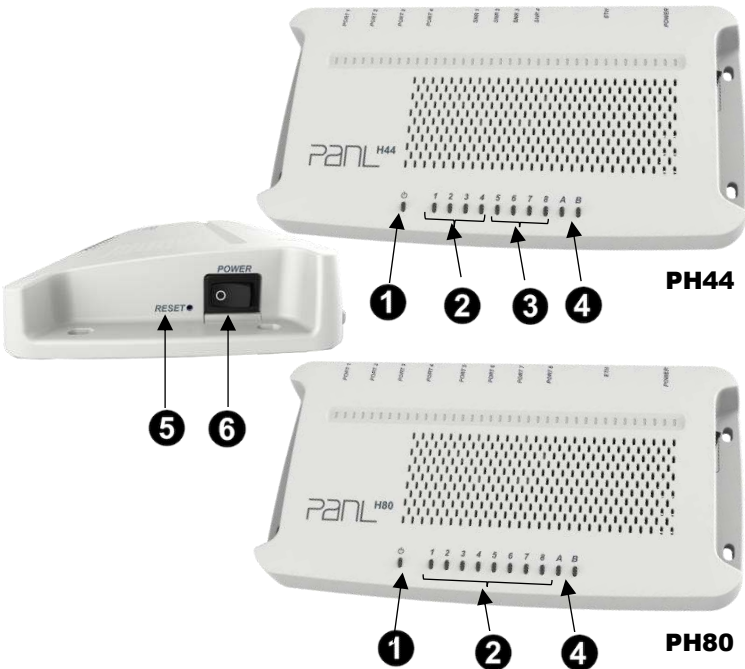


PANL PH44/PH80 Hub Quick Start Guide

Product Features



- 1 Power Indicator
- 2 RJ45 Port 1 to Port 4 Indicator (PH44 Only)
RJ45 Port 1 to Port 8 Indicator (PH80 Only)
- 3 RJ11 Port 5 to Port 8 Indicator (PH44 Only)
- 4 LED Indicator - Refer to the section - **PH44/80 System Health LED Indicator** for details
- 5 Reset Button/Control menu - Refer to the section - **PH44/80 System Health LED Indicator** for details
- 6 Power Button

Product Specifications

SPECIFICATIONS		
PLATFORM	OS	Linux
	Chipset	Broadcom BCM2837
	CPU	Quad Core 1.2GHz 64bit ARM Processor
MEMORY	Internal Memory	1GB RAM, 4GB eMMC Flash
PORTS	Ethernet	1x 10/100BASE TX
	RJ45	4x RS485 interface ports (PH44 Only) 8x RS485 interface ports (PH80 Only)
	RJ11	4x RS485 interface ports (PH44 Only)
WIRELESS CONNECTIVITY	Wi-Fi	802.11 b/g/n Only available on model: PH44 PH4401/4403/4405/4407/4411/4413/ 4415/4421/4423/4425/4441/4443/4445
	Z-Wave	Only available on model: PH44 EU PH4410/4411/4412/4413/4414/4415/4416 US PH4420/4421/4422/4423/4424/4425/4426 AU PH4440/4441/4442/4443/4444/4445/4446
		PH80 PH8001/8003/8005/8007/8011/8013/ 8015/8021/8023/8025/8041/8043/8045
	Zigbee	Only available on model: PH44 PH4402/4403/4406/4407/4412/4413/4416/4422/ 4423/4426/4442/4443/4446
		PH80 PH8002/8003/8006/8007/8012/8013/8016/8022/ 8023/8026/8042/8043/8046
	RF433	Only available on model: PH44 PH4404/4405/4406/4407/4414/4415/4416/4424/ 4425/4426/4444/4445/4446
		PH80 PH8004/8005/8006/8007/8014/8015/8016/8024/ 8025/8026/8044/8045/8046
MISC	Operating Temperature	-10°C to 50°C
	Mechanical Dimensions	129.4mm x 256.3mm x 35.0mm

* PanL Hub models PD4400 and PD8000 do not have any wireless connectivity options



Please visit <http://panlshop.com/warranty> or scan the QR code for warranty registration with the UUID and Product Key below:

STICKER AREA

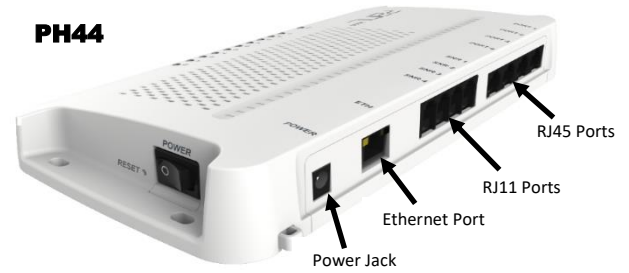


Hub Setup

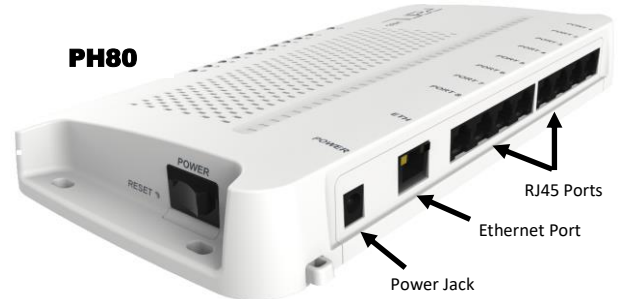
1. Place hub based on the below recommendations:
 - A.** Ensure the availability of an AC outlet nearby;
 - B.** Place on a flat surface area;
 - C.** Best to be placed in an open area with good ventilation;
 - D.** Best to be positioned central to all wireless devices (if any);
 - E.** Place near Ethernet point if using wired Ethernet connection.
 - F.** Apply screws to the sides of the hub to secure the hub.
2. Attach an AC power plug cable to the power adaptor included and connect to the hub's power jack. Switch on the power button located at the side of the hub.
3. For applications which require a network connection, connect a RJ45 Ethernet cable (not included) to the Ethernet port of the hub. Alternatively, the hub can be connected to a wireless network if the Wi-Fi option is present in the hub.
4. Connect any PanL wired devices to the hub through the RJ45 ports or RJ11 ports. Ensure that the length of the RJ45 8P8C cables do not exceed 100 Metres from the port to the wired device. In the event that a single port is used to power up a few PanL devices in a daisy chain configuration, the first connection to a PanL device and the subsequent connections between the PanL devices must not exceed 50 metres in cable length. The total combined cable length must not exceed 100 metres.

For RJ11 port connections, the RJ11 6P4C cable length must not exceed 50 metres from the port to the PanL device.

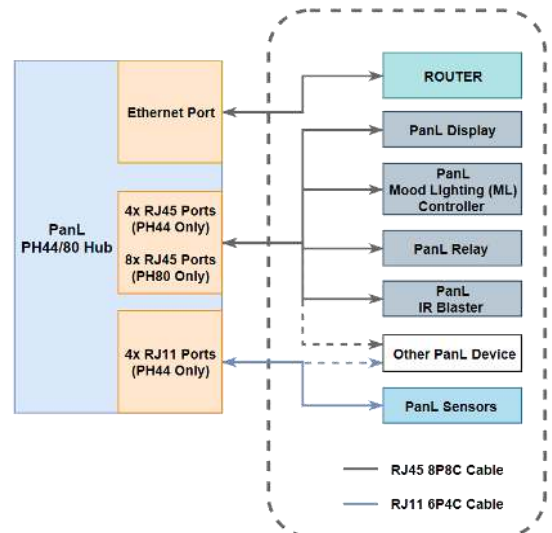
PH44



PH80



5. Any unused RJ45 ports must be connected to the terminators provided.
6. PanL wired device connections are depicted below: Please refer to the specific PanL device quick start guide or application user manual for more details.



PH44/80 System Health LED Indicator

Hub Status Description	System Health LED Indicator			
	LED A		LED B	
Unconfigured Hub Mode (Please refer to the application user manual for configuration details)	Green blinking		Green blinking	
Boot up	Green Blinking		Green	
Normal Operation Mode	Green		Green	
Re-Boot/Shutdown	Blue blinking		Green	
Factory reset/Firmware Rollback	Yellow Blinking		Yellow Blinking	
Factory reset/Firmware Rollback Failed (Manually power off and on hub to reboot)	Blue blinking		Blue blinking	
Network Link Missing (Check if Ethernet cable is connected or hub's Wi-Fi is configured)	Green		Red	
Hub Temperature is above the threshold value (Alert notification will be sent to the user and Hub will shut down)	Red Blinking		Red Blinking	

The Hub's control menu can be accessed through the [Reset] button located at the side of the hub to trigger certain actions:

Action	Instruction
Activate Control Menu	To activate control menu, do a long press on the [Reset] button until the System Health LED indicators (LED A and LED B) are flashing green. Do an immediate short press again to enter into the control menu. Port 1-Port 4 indicators flashes green indicating control menu is successfully triggered.
Function Selection	<p>After successfully triggering the control menu, the corresponding 4 functions below can be toggled by doing short presses on the [Reset] button, this will be reflected on Port 1-Port 4 indicators:</p> <p>Port 1)Rollback to previous firmware Port 2)Set Hub back to un-configured state Port 3)Reset Hub to Factory Settings Port 4)Go back to Port 1 selection</p> <p>Once the desired function is selected, simply do a long press and the selected port indicator will change from green to yellow indicating that the desired function is successfully executed. If there is no input selection for a period of time after control menu is triggered, the hub will return to the normal operation mode.</p>
Reboot	To perform a reboot function, simply do a short press (3-5 seconds) on the [Reset] button.
System Shutdown	To perform a system shutdown, simply press the [Reset] button for more than 5 seconds and release. LED A will flash blue while LED B will flash green indicating a successful shutdown.

What's in the Box?

The package includes a PH44/PH80 Hub, a 24V DC power adaptor and 4/8 terminators for PH44/PH80 respectively. The power plug cable is not included in the box and is packaged outside the box separately.



24V DC Power Adaptor



PanL Terminator

	Power Adaptor Ratings	
PH44	24VDC/2.5A	60W
PH80	24VDC/5.0A	120W

FCC Statements

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference, and
- 2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a building installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF exposure guidelines, at least 20 cm of separation distance between the PanL PH44/80 Hub device and the user's body must be maintained at all times.