panL

PH44/PH80 Quick Start Guide

Bridgetek BRIDGING TECHNOLOGY

Product Features

PH44

PH80

Reset Button

Power Button
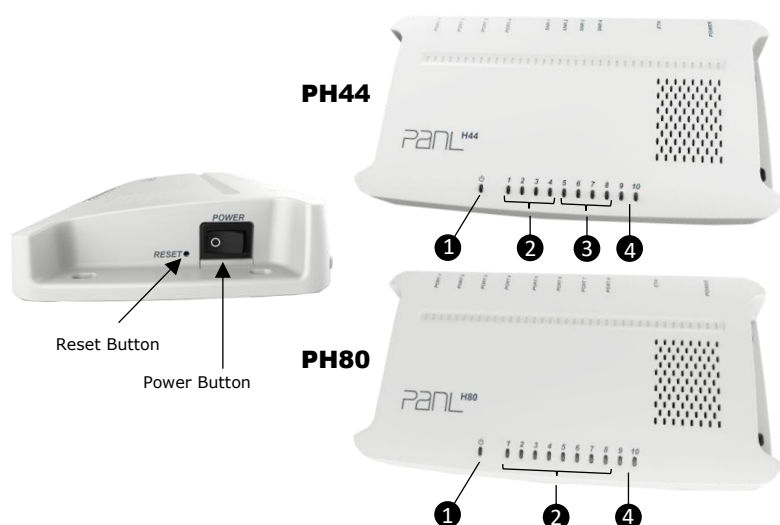
1	Power Indicator
2	RJ45 Port 1 to Port 4 Indicator (PH44 Only) RJ45 Port 1 to Port 8 Indicator (PH80 Only)
3	RJ11 Port 5 to Port 8 Indicator (PH44 Only) –For PanL Sensor Device
4	System Health Indicator: Refer to the section – **PH44/80 System Health LED Indicator** for details

Product Specifications

PanL Hub44

PLATFORM	OS	Linux
	Chipset	Raspberry Pi CM3 (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 device ports
	RJ11	4x RS485 interface sensor ports
RF MODULES	Wi-Fi	GWF-3M08 (RT5370), 802.11 b/g/n Only available on model: PH4401/4403/4405/4407/4411/4413/ 4415/4421/4423/4425/4441/4443/4445
	Zwave	ZM5304 Only available on model: EU PH4410/4411/4412/4413/4414/4415/4416 US PH4420/4421/4422/4423/4424/4425/4426
	ZigBee	EMB-Z2538PA/IA Only available on model: PH4402/4403/4406/4407/4412/4413/4416/4422/ 4423/4426/4442/4443/4446
	RF433	RF433 Only available on model: PH4404/4405/4406/4407/4414/4415/4416/4424/ 4425/4426/4444/4445/4446
MISC	Operating Temperature	-10°C to 80°C
	Mechanical Dimensions	129.4mm x 256.3mm x 35.0mm

PanL Hub80

PLATFORM	OS	Linux
	Chipset	Raspberry Pi CM3 (BCM2837)
	CPU	Quad Core 1.2GHz 64bit ARM Processor
MEMORY	Internal Memory	1GB RAM, 4GB eMMC Flash
PORTS	Ethernet	1x 10/100BASE TX
	RJ45	8x RS485 interface device ports
	RJ11	NA
RF MODULES	Wi-Fi	GWF-3M08 (RT5370), 802.11 b/g/n Only available on model: PH8001/8003/8005/8007/8011/8013/ 8015/8021/8023/8025/8041/8043/8045
	Zwave	ZM5304 Only available on model: EU PH8010/8011/8012/8013/8014/8015/8016 US PH8020/8021/8022/8023/8024/8025/8026 AU PH8040/8041/8042/8043/8044/8045/8046
	ZigBee	EMB-Z2538PA/IA Only available on model: PH8002/8003/8006/8007/8012/8013/8016/8022/ 8023/8026/8042/8043/8046
	RF433	RF433 Only available on model: PH8004/8005/8006/8007/8014/8015/8016/8024/ 8025/8026/8044/8045/8046
MISC	Operating Temperature	-10°C to 80°C
	Mechanical Dimensions	129.4mm x 256.3mm x 35.0mm

* There is no RF modules for PanL Hub Basic models PD4400 and PD8000. Connect to wired devices only.


Hub Setup

1. Place hub based on below recommendations: **A.** Ensure the availability of an AC outlet nearby; **B.** Place on a flat surface area in an upright position; **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 router if using wired Ethernet connection. **F.** Apply screws to the sides of the hub to secure the hub.

2. Attach a power plug cable to the power adaptor provided and connect to the hub's power jack. Switch on the power button located at the side of the hub.

3. For applications which are required to be connected to the Internet or a local network, the hub can be connected to a   local router through the Ethernet port (Ethernet cable not provided). Alternatively the hub can also be connected to the router if the Wi-Fi RF module is present in the hub model.

4. Connect any PanL wired devices to the hub through the RJ45 ports or RJ11 ports for PanL sensors. Ensure that the length of the RJ45 cables does 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 total combined cable length must not exceed 100 Meters.
 For RJ11 ports, the cable length must not exceed 50 Meters from the port to PanL sensor device. For more details on wired device connections, refer to the respective device quick start guide.
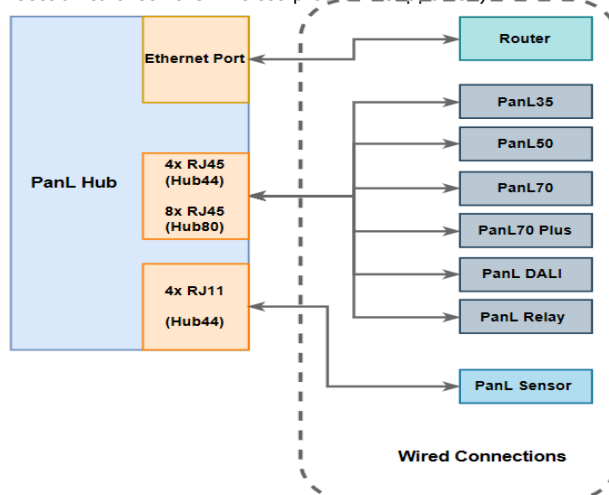

RJ45 Ports

RJ11 Ports

Ethernet Port

Power Jack

PH44

RJ45 Ports

Ethernet Port

Power Jack
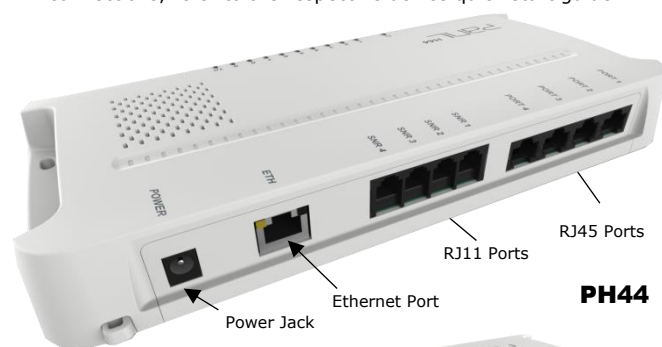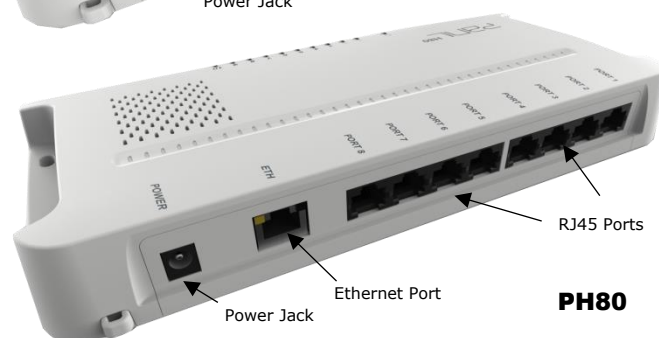
PH80

5. Any unused RJ45 ports must be connected to the terminators provided.

6. Any active wireless devices within the operating range of the hub will be automatically detected (Refer to the **Product Specifications** section to check the wireless protocols supported)

Wired Connections

PH44/80 System Health LED Indicator

Hub Status Description	System Health LED Indicator			
	LED 9		LED 10	
Unconfigured Hub Mode (Please refer to the User Manual for configuration)	Green blinking		Green blinking	
Boot up	Green Blinking		Green	
Normal Operation Mode	Green		Green	
Re-Boot/ Shutdown	Blue blinking		Green	
Factory reset or firmware rollback	Yellow Blinking		Yellow Blinking	
Factory reset or roll back 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 and Hub will shut down)	Red Blinking		Red Blinking	

The Hub's control menu cab 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 9 and 10) are flashing in green. Do an immediate short press again to enter into the control menu. LED 1-4 flashes green indicating control menu is successfully triggered.
Function Selection	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 LED 1-4. 1)Rollback to previous firmware 2)Set Hub back to un-configured state 3)Reset Hub to Factory Settings 4)Go back to selection (1) Once the desired function is selected, simply do a long press and the selected LED will change from green to yellow indicating that the function desired is successfully executed. If there is no input selection for a period of time, the hub will return to the normal operation mode.
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 9 will be flashing blue while LED 10 will be flashing 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 may be packed outside the box separately.

24V DC Power Adaptor

PH44/PH80 Terminator

	Adaptor Model#	Power Ratings
PH44	SSA-0601HE	24VDC 2.5A
PH80	GST120A24-P1M	24VDC 5.0A

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 residential 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 (To be updated based on MPE report) cm of separation distance between the PanL Hub44 device and the user's body must be maintained at all times.