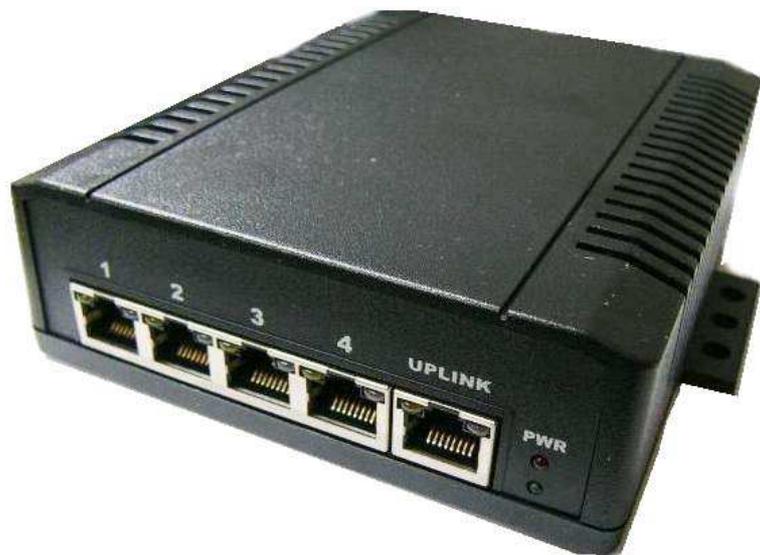


PSE-SW5G44BB

5 Port PoE Switch & Extender **(Repeat Ethernet and PoE)**

USER'S MANUAL



MSTRONIC CO., LTD.

1. General Information

The PSE-SW5G44BB PoE (Power Over Ethernet) Switch provides four 10M/100M/1000M TX ports with 802.3at PoE PSE function. It plus one 10M/100M/1000M TX up-link port with 802.3bt PoE PD function that accepts power from PoE power sourcing equipment (PSE) and delivers power to PoE powered device (PD) through the traditional UTP or STP cable. The PoE Switch can extend Ethernet data and DC power up to 200 meters.

2. Hardware Description

*LED Indicator

There are 12 LEDs on the PoE switch to indicate the status of power and signal. The following section describes the functions of each LED indicator.

Front panel detail



*POWER LED

LED	STATUS	Description
Power	Green	LED ON when power input (DC IN on rear panel or UPLINK on front panel) has valid power supplied.
	Off	No power supplied.

*SWITCH LED (the right indicator on RJ45)

LED	STATUS	Description
P1~P5 Link/Act	Green	A network device is detected (1000Mbps), but no communication activity is detected.
	Green Blinking	This port is transmitting, or receiving package from another device at 1000Mbps.
	Yellow	A network device is detected (10Mbps or 100Mbps), but no communication activity is detected.
	Yellow Blinking	This port is transmitting or receiving package from another device at 10Mbps or 100Mbps.
	Off	No device is detected.

*PoE LED (the left indicator on RJ45)

P1~P4 PoE (PSE)	Yellow	A valid Powered Device (PD) is detected and delivering power on this port.
	Off	No PD is detected on this port.
UPLINK (P5) PoE (PD)	Yellow	Powered via all 4 data pairs.
	Yellow Blanking	Powered via 2 data pairs. (1,2,3,6 or 4,5,7,8 are all acceptable).
	Off	No power is detected on this port.

*Power wiring

The PoE switch allows to be powered by another PoE source on port 5 (UPLINK) as a PoE repeater or extender, or powered via rear terminal,

For PoE operation, make sure your power supply can offer at least 75W for 4x 802.3af PoE port, or 150W for 4x 802.3at PoE port.

If powered via the rear terminal, please make sure the input current is not over 10A. total output 8A maximum.

If powered on port 5, the input current should not over 2Amp. The input range should be 44~57VDC, the total output is 70W maximum with 802.3bt input or 100W with passive PoE input.

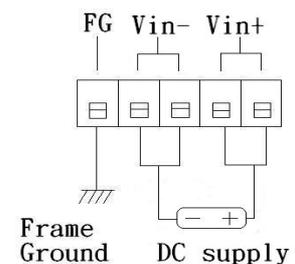
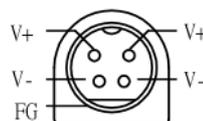
Ports 1~4 will deliver DC power over the Ethernet cable as detailed below:

- * Data pair A on line 1 and 2
- * Data pair B on line 3 and 6
- * Data pair C plus V+ on line 4 and 5
- * Data pair D plus V- on line 7 and 8

Port 5 may receive DC power over the Ethernet cable, as detailed below:

- * Data pair A plus V+ /V- on line 1 and 2
- * Data pair B plus V-/V+ on line 3 and 6
- * Data pair C plus V+/V- on line 4 and 5
- * Data pair D plus V-/V+ on line 7 and 8

The terminal block on the rear panel should be wired as detailed below:



The DIN-4P connector on the rear panel also used for power input, you can use an AC/DC adapter with DIN-4P connector directly, recommends adaptor MS-180-56-DIN (OPTION)

The input voltage must be in the range of 44 to 57VDC if running for 802.3af operation.

The input voltage must be in the range of 50 to 57VDC if running for 802.3at operation.

If the model is not powered with the above designated input voltage, it will only function as an Ethernet switch without PoE output.

Model	Input Voltage (REAR)	Input Voltage (Port 5)	Output voltage	Isolated
PSE-SW5G44BB	44-57VDC	No input	44-57VDC (non-regulated)	No
	No input	44-57VDC	44-57VDC (non-regulated)	No
	44-57VDC	44-57VDC	Higher voltage output (REAR or Port5)	No

*Ethernet Port Wiring

The PoE switch supports one RJ-45 uplink (port 5 with PoE PD) and four RJ-45 ports (port 1~4 with PoE PSE) with automatic MDI/MDI-X crossover, auto-sense for speed and duplex for 10Base-T, 100Base-TX or 1000Base-T connection. Automatic MDI/MDI-X crossover allows you to connect to other devices (switches, hubs, or workstations etc.), without regard to using straight-through or crossover cabling.

Port 1 to 4 provides Power over Ethernet function that delivers DC power through the data pairs C & D (pin 4,5 and pin 7,8) (mode B) to the PD.

Port 5 provides Power Device function that receive power from 4 pairs or 2 pairs Ethernet cable.

The following tables describe the wiring diagram of straight-through and crossover cabling. The crossover cables simply cross-connect the transmit lines at each end to the receive lines at the opposite end.

Straight-through Cabling	
Pin 1	Pin 1
Pin 2	Pin 2
Pin 3	Pin 3
Pin 6	Pin 6
Pin 4	Pin 4
Pin 5	Pin 5
Pin 7	Pin 7
Pin 8	Pin 8

Cross-over Cabling	
Pin 1	Pin 3
Pin 2	Pin 6
Pin 3	Pin 1
Pin 6	Pin 2
Pin 4	Pin 7
Pin 5	Pin 8
Pin 7	Pin 4
Pin 8	Pin 5

Connect an Ethernet cable into any switch port and connect the other side to your attached device. The Link/Act LED (green or yellow) will light up when the cable is correctly connected. Refer to the **LED Indicator** section for descriptions of each LED indicator.

If a port LED is off, go back and check for connectivity problems between that port and the network device connected.

The maximum cable length for 10/100/1000BaseT with Cat 5 twisted pair cables is typically 100m (328 ft.).

*PSE Port Wiring

Port 1 to 4 provides PoE injection function with maximum 35W ability to power up the powered device using the straight-through or cross-over Ethernet cable.

The PoE switch follows the IEEE802.3af/at Alternative B mode connector assignment. The following table shows pin assignment of alternative A and B for the Power Source Equipment.

Conductor	Alternative A (MDI-X)	Alternative A (MDI)	Alternative B (All)
1	Negative Vport	Positive Vport	
2	Negative Vport	Positive Vport	
3	Positive Vport	Negative port	
4			Positive Vport
5			Positive Vport
6	Positive Vport	Negative Vport	
7			Negative Vport
8			Negative Vport

Be sure the twisted pair cable is bound with the standard RJ-45 pin, especially the pins 4, 5, 7 and 8. If the RJ-45 is bound with the wrong pin number, the PoE switch will not recognize the PD and won't deliver DC power to the PD. The yellow PoE LED will light up when the cable is correctly connected. Refer to the **LED Indicator** section for descriptions of each LED indicator. If a port LED is off, go back and check for connectivity problems between that port and the network device connected.

*Network Application

The PoE Switch can receive power from a PoE midspan and provide power to the PD which follows the IEEE 802.3af/at standard in the network. The PoE Switch can be installed in a more appropriate position for better performance to extend Ethernet to 200 meters. The following figure is an example of a network application for the PoE Switch.



3. Technical Specifications

Standards	IEEE802.3/IEEE802.3u standards/IEEE802.3af/at (10 base-T/100base-TX/1000base-T)
Ports	5 ports with PoE (4 PSE & 1 PD), support auto-crossover & auto-polarity
Transmission speed	1000Mbps (1000base-T).100 Mbps (100base-TX), 10 Mbps(10base-T) Auto-negotiation
Switch technology	store-and-forward
Protocols	CSMA/CD
Flow control	IEEE802.3x (full-duplex), back pressure (half-duplex)
Data transmission rate	1488000pps for1000base-T, 148800pps for 100base-T, 14880pps for 10base-T
Address table	2K MAC address table, self-learning
Connect	RJ-45
PoE port	Port 1-4, PSE auto power management Pin assignment: *B mode: data pair A (1,2), data pair B (3,6), data pair C plusV+(4,5), data pair D plus V-(7,8) Port 5, 4 pairs PD
Maximum PoE Output	Port 1-4: IEEE802.3af – 16.8W IEEE802.3at – 35W

Maximum PoE Input	Port 5: 71W (compliant to 802.3bt class 8) Or 100W passive PoE										
PSE disconnect mode	DC disconnect										
PoE auto detection	IEEE802.3af , IEEE802.3at (2 event classification signaling) & IEEE802.3bt(multi-event classification)										
PoE protection	Over-temperature, over-current, over/under voltage										
LEDs	*Link/Activity (Green ON/ Green Blinking @1000Mbps, Yellow/Yellow Blinking @10M/100Mbps) *PoE (Yellow) port 1-4 ON - PD detect Port 5 ON – 4 pair power, Blinking-2 pair power *POWER Green-normal										
Power input	Port 5 (UPLINK) from PoE switch or midspan, or optional DC power supply.										
Power consumption	less than 5W when without PD loading										
	<table border="1"> <thead> <tr> <th>Input</th> <th>Power consumption</th> </tr> </thead> <tbody> <tr> <td>12V</td> <td>0.190A</td> </tr> <tr> <td>24V</td> <td>0.104A</td> </tr> <tr> <td>48V</td> <td>0.061A</td> </tr> <tr> <td>56V</td> <td>0.056A</td> </tr> </tbody> </table>	Input	Power consumption	12V	0.190A	24V	0.104A	48V	0.061A	56V	0.056A
Input	Power consumption										
12V	0.190A										
24V	0.104A										
48V	0.061A										
56V	0.056A										
Power efficiency	85% at full load (@48V typical)										
Operating temperature	-20°C ~ +75°C										
Operation humidity	90% relative humidity, non-condensing										
Storage temperature	-40°C ~ +85°C										
Dimension	40mm(H)x118mm(W)x150mm(D) DIN RAIL Mountable										

