

## RT7650

30W POE PD Module ( Isolation Model)

### Product Description



Version	Date	Author	Approved By	Remarks
V1.0	2019/2/14	LI xiao yan	Rock	12V Base on RT7650B

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### Features:

- IEEE802.3at and IEEE802.3af compliant
- Maximum 30W output power
- Input voltage range 36V to 57V
- Integral high efficiency DC/DC converter.
- Low output ripple and noise
- High performance with low price
- Short-circuit protection
- Transformer isolation ,1500V isolation (input to output)
- Easy to use, with a minimum number of external components.
- Integrated 100M LAN Filters
- IEC 61000-4-2 Level 4 (8KV/15KV) ESD protection
- IEC 61000-4-5 Level 3 SURGE LEVEL :10/700 $\mu$ s 40ohm 4KV---Optional

### Applications:

- IP Cameras
- Wireless access point
- Security and alarm systems
- VOIP telephone
- Point of sale network terminal equipment

### Description:

The RT7650 series of modules are designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af and IEEE 802.3at Power-over-Ethernet(PoE) standard.

The RT7650 signature and control circuit provides the PoE compatibility signature and power classification required by the Power Sourcing Equipment (PSE) before applying up to 30W power to the port.

The DC/DC converter operates over a wide input voltage range and provides a regulated output. The DC/DC converter also has built-in short-circuit output protection.

## I Product Selector

Part Number	Nominal Output *	Maximum Output Power*	ESD protection	Surge Level CM	Surge Level DM	Marking	Package
RT7650 -1	12V 2A	30W	YES	1KV	1KV	RT7650	38*38
RT7650 -2	12V 2A	30W	YES	2KV	2KV	RT7650	38*38
RT7650 -4	12V 2A	30W	YES	4KV	4KV	RT7650	38*38

\*At 25°C with VIN = 54V

## I Power Classification

The RT7650 classification is fixed at Class 4, this means that an IEEE802.3at Type 1 or an IEEE802.3af PSE will default to Class 0. However an IEEE802.3at PSE will recognise the Class 4 as a Type 2 PD.

## I RT7650 Pin Description:

Connector and Pin Description	
<b>J1</b>	<b>POE_IN 1 1.25mm Connector</b>
1	Ethernet cable 1
2	Ethernet cable 2
3	Ethernet cable 3
4	Ethernet cable 6
5	LED+ Internal Connector J3 5pin
6	LED- Internal Connector J3 6pin

<b>J2</b>	<b>POE_IN 2 1.25mm Connector</b>
1	DC Auxiliary input 12V+
2	DC Auxiliary input 12V-
3	Ethernet cable spare pair 4,5
4	Ethernet cable spare pair 7,8

<b>J3</b>	<b>OUT (Split putout) 1.25mm Connector</b>
1	Ethernet cable 1
2	Ethernet cable 2
3	Ethernet cable 3
4	Ethernet cable 6
5	LED+ Internal Connector J1 5pin
6	LED- Internal Connector J1 6pin
7	12V Output +
8	12V Output -

<b>J4</b>	<b>DC out 2 , 2.0mm Connector</b>
1	12V Output +
2	12V Output -

## I Absolute Maximum Ratings

	Parameter	Symbol	Min	Max	Units
1	DC Supply Voltage	VCC	-0.3	60	V
2	DC Supply Voltage Surge for 1ms	VSURGE	-0.6	80	V
3	Storage Temperature	TS	-40	100	°C

Note 1: Exceeding the above ratings may cause permanent damage to the product. Functional operation under these conditions is not implied. Maximum ratings assume free airflow.

## I Recommended Operating Conditions

	Parameter	Symbol	Min	Typ	Max	Units
1	Input Supply Voltage1	VIN	36	48	57	V
2	Under Voltage Lockout	VLOCK	30		36	V
3	Operating Temperature2	TOP	-20	25	70	Ta / °C
4	Operating Temperature 30W Continuous	TOP	-40	25	50	Ta / °C
	24W Continuous				70	
	14W Continuous				85	

Note 1: With minimum load

2: See Section Operating Temperature Range

\*\* Extended use close to, or at the maximum operating temperature can reduce the life time of the device.

## I DC Electrical Characteristics

	DC Characteristic	Sym	Min	Typ1	Max	Units	Test Comments
1	Nominal Output Voltage	+VDC	11.5	12.0	12.5	V	12V
2	Line Regulation	VLINE		0.1		%	@ 50% Load
3	Load Regulation	VLOAD		1		%	@ VIN=48V
4	Output Ripple and Noise	VRN		180		mVp-p	@ Max load2
5	Minimum Load	RLOAD	200			mA	
6	Short-Circuit Duration3	TSC			∞	sec	
7	Efficiency @ 80% Load	EFF		86		%	
8	Isolation Voltage (I/O)	VISO		1500		VPK	Impulse Test
9	Temperature Coefficient	TC		0.02		%	Per °C

Note 1: Typical figures are at 25°C with a nominal 48V supply and are for design aid only. Not Guaranteed

2: The output ripple and noise can be reduced with an external filter, see application note.

3: Continuous short circuit duration is applicable at 25°C ambient temperature in free air. At higher temperatures or with restricted

airflow (e.g. in a sealed enclosure) the duration will need to be limited to avoid overheating.

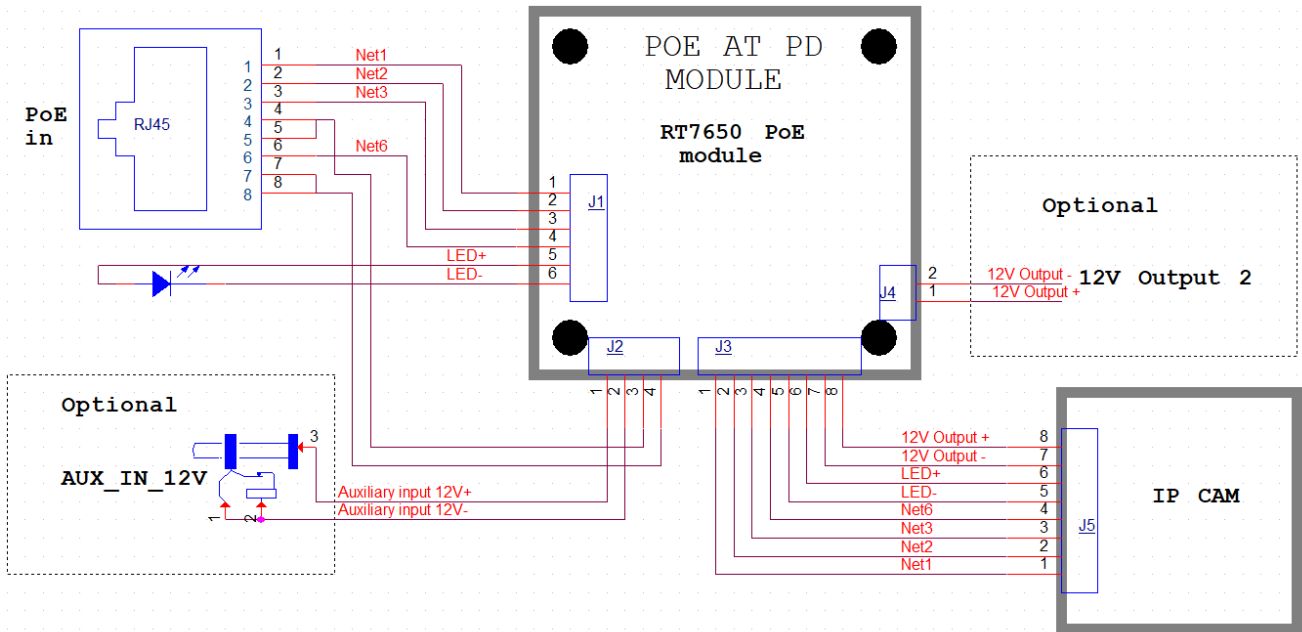
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I RT7650 Typical Connection Diagram :



I RT7650 Package Size : (mm±0.3mm)

