

# IEEE802.3at Task Force Contribution for Vport ad hoc

## Voltages and Currents in Power Over MDI systems

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Yair Darshan  
Microsemi Corporation

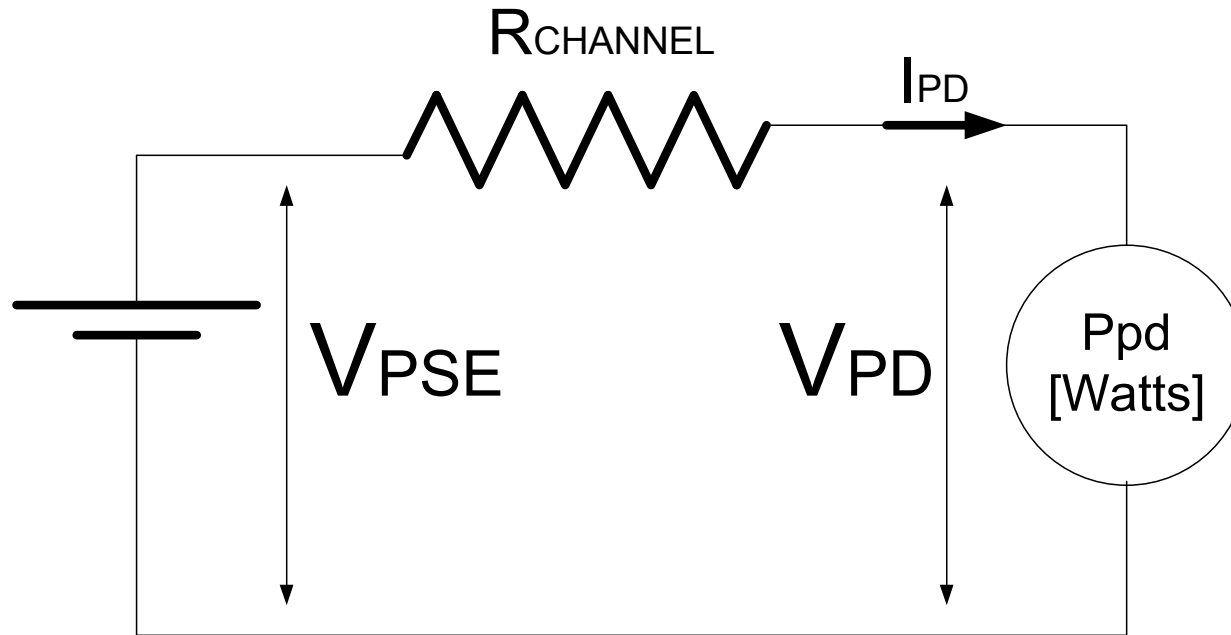


# Objective

- To Describe how we derived Voltages and Currents Values in IEEE802.3af.
- To use the same tools for 802.3at
- Generate the new set of numbers for 802.3at



# Simplified 802.3 Power Over MDI systems



$$\frac{V_{pse} - V_{pd}}{R_{channel}} = \frac{P_{pd}}{V_{pd}} = I_{pd}$$

$V_{pse}$ ,  $R_{channel}$  and  $P_{pd}$  are constants.

Solving the above results with:



# Simplified 802.3 Power Over MDI systems

$$V_{pd} = \frac{V_{pse} + \sqrt{(V_{pse}^2 - 4 \cdot P_{pd} \cdot R_{channel})}}{2}$$

$$I_{pd} = \frac{P_{pd}}{V_{pd}}$$

Vpse	Rcable	Ppd	Vpd	Iport
44	20	12.95	37	0.35
57	20	12.95	52.02	0.25
57	0	12.95	57.00	0.23
50	12.5	29.52	41	0.72
57	12.5	29.52	49.55	0.60
57	0	29.52	57.00	0.52

802.3af

802.3at

