

4PPoE Market Requirements & Considerations

4PPoE Study Group - May Interim Presentations

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Market Requirements

- ❑ Markets presented during CFI in March 2013

Markets	Typical Power Consumption
Nurse Call Systems - HealthCare	80% market needs >30W (Typically 50W)
Point Of Sale –Retail (POS – credit card readers and printers)	40-50% in 30-60W range
IP Turrets – Banking, financial trade floor phone systems	Typically 45W
Building Management (Lighting Fixtures & Controllers, Access Controllers, etc.)	40-50W
Thin Clients, Virtual Desktop Infrastructure(VDI) terminals (High-end configuration)	~50W
Video Conferencing, Hospitality (e.g.,: PoE powered switches)	Typically 45-60W
IP Security Cameras (Pan, Tilt, Zoom cameras)	30-60W range
Industrial (Brushless and Stepper drives, Motor control units)	>30W

Identifying 4PPoE

- Identifying 4-pair PD
- Functionality of 2-pair PD with a 4-pair PSE
 - Should work in 2-pair mode, unperturbed
- Functionality of 4-pair PD when connected to 2-pair PSE
 - Should work if PD can work in the reduced mode (e.g. by disabling few accessories)

Cable Temperature

- In IEEE 802.3 Clause 33, Cable study was done for 600mA continuous current on all pairs.
- Anything more would need reducing cable bundle size

Other Considerations

- Current imbalance between the set of pairs.
 - Cable imbalance
 - Circuit imbalance
 - PCB imbalance
- Each 2P imbalance (is similar to Type 1 and Type 2)
- Bringing spare pair up or down without affecting signal pair
- Handling overload or fault on one pair while the other pair is within operating limits

10GBaseT considerations

- Cabling requirements
- Magnetic Saturation (I Vs L)
 - Ability to handle continuous currents
 - Ability to handle transients
 - Current Imbalance Scenarios
- EMI considerations
- Ripple and Noise allowances.

Summary

Consideration should be given to

- Power
- Safety
- Cabling
- Backward compatibility
- Support for 10GBaseT