

Panasonic Position on ENERGY STAR TVs Draft 2 Specification

EPA Stakeholder Meeting

San Diego, CA

18 October 2007

Draft 2 Spec. Includes Some Improvements

- Acceptance of IEC measurement test condition in standard mode will help ensure shipment of units in lower consumptive mode
 - Menu startup selection of Home versus Retail mode beneficial
 - Will help capture energy savings otherwise lost by manufacturers' critical need to have TVs in brightest setting for retail settings
- Separate formulas by TV resolution provides more accurate basis for measurements
 - Greater power needs of 1080p recognized
 - Separation did not eliminate disparities because new formulas made more stringent on 720p qualification
- Neither of above changes addresses the fundamental issue of separation of technologies

Separate Classes by Technology

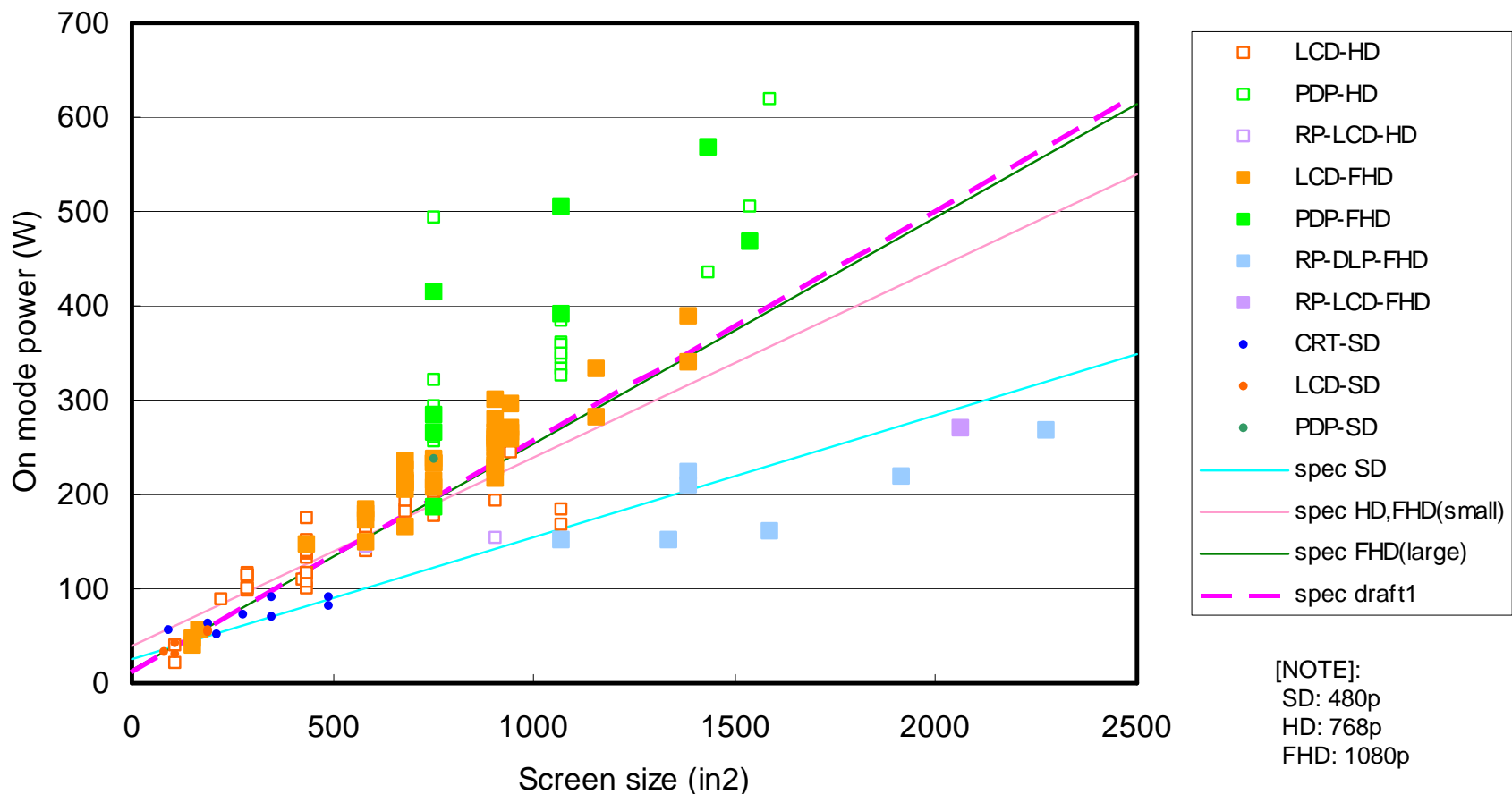
- Current qualification formula puts all TV technologies into a single grouping
 - Ignores marketing realities and consumer preferences

Table 1: On Mode Power Level Requirements for TV Products

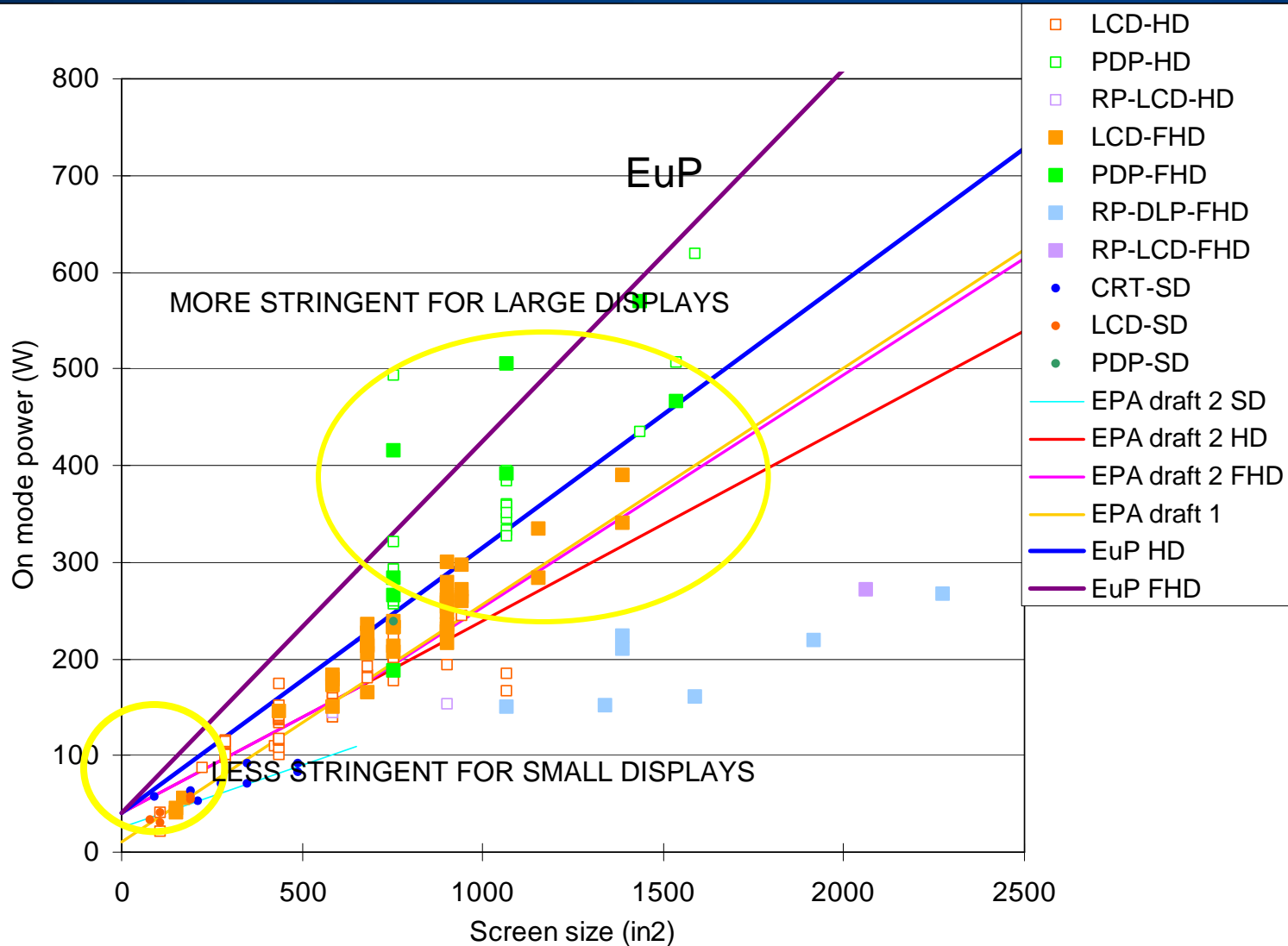
Vertical Resolution	Tier 1: Effective September 1, 2008		Tier 2: Effective September 1, 2010	
	Maximum On Mode Power Consumption (A expressed in inches ²)	Maximum On Mode Power Consumption (A expressed in cm ²)	Maximum On Mode Power Consumption (A expressed in inches ²)	Maximum On Mode Power Consumption (A expressed in cm ²)
≤ 480 All Screen Areas	$P_{Max} = 0.13 * A + 25$	$P_{Max} = 0.02015 * A + 25$	TBD	TBD
≤ 768 All Screen Areas	$P_{Max} = 0.20 * A + 40$	$P_{Max} = 0.03100 * A + 40$	TBD	TBD
> 768 Screen Area ≤ 650 inch ² (4,194 cm ²)	$P_{Max} = 0.20 * A + 40$	$P_{Max} = 0.03100 * A + 40$	TBD	TBD
> 768 Screen Area > 650 inch ² (4,194 cm ²)	$P_{Max} = 0.24 * A + 14$	$P_{Max} = 0.03720 * A + 14$	TBD	TBD

Draft 2 Spec Favors Smaller Size Models

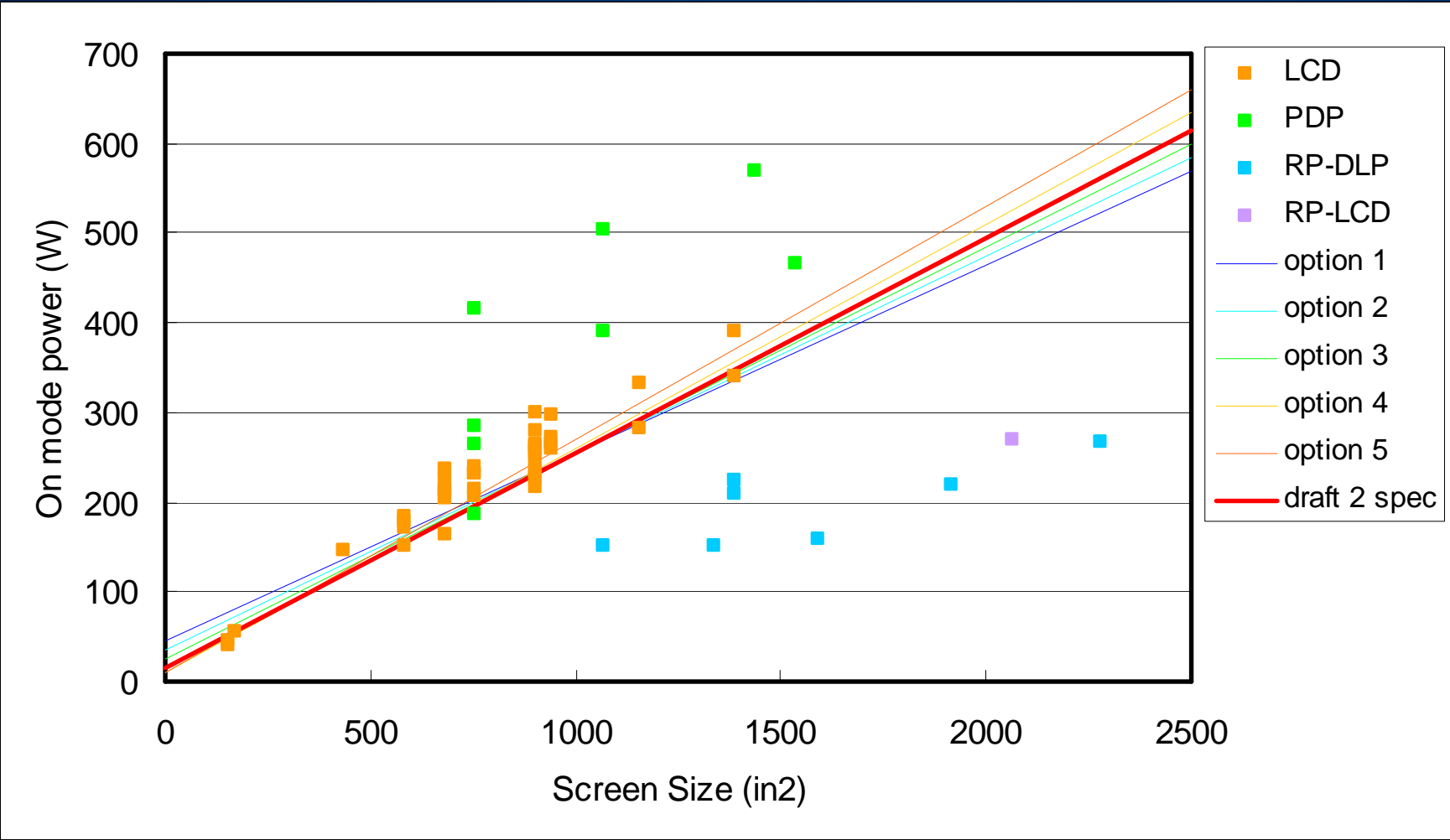
- Draft 2 spec for FHD nearly same as earlier version
- Draft 2 spec for HD more stringent for large (>40") size



RP Pulls Down ENERGY STAR Slope



Over-Representation of RP in Large Screen FHD



Necessary Modification to Improve FHD Formula

Acceptability (%)		SLOPE [W/square inch]								
		0.2	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28
BASE POWER (intercept) [W]	0	14%	14%	14%	14%	16%	23%	30%	32%	38%
	5	14%	14%	14%	14%	20%	30%	32%	39%	48%
	10	16%	16%	16%	20%	29%	34%	34%	46%	57%
	15	18%	18%	20%	23%	34%	36%	41%	52%	61%
	20	18%	20%	23%	30%	36%	38%	46%	55%	64%
	25	20%	21%	27%	34%	36%	43%	50%	63%	77%
	30	21%	27%	30%	36%	38%	48%	61%	77%	80%
	35	23%	27%	34%	38%	45%	55%	70%	80%	82%
	40	27%	30%	36%	43%	50%	63%	77%	80%	86%
	45	27%	34%	39%	46%	61%	77%	80%	84%	88%
	50	30%	39%	45%	55%	68%	79%	82%	84%	89%

- Near EPA's target of 25% qualification
- Draft 2 spec (approximate)
- Panasonic proposal




Draft 2 spec for FHD:

$$P = 0.24 \text{ (W/inch}^2\text{)} * A \text{ (inch}^2\text{)} + 14$$
(W)
↑
SLOPE
↑
BASE

- Using EPA dataset, acceptability was calculated for each parameter.
- EPA's stated target is around 25%
- Actual target should exceed 25% because some models may not qualify for standby power and DAM

Necessary Modification to Improve HD Formula

Acceptability (%)		SLOPE [W/square inch]								
		0.2	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28
BASE POWER (Intercept) [W]	0	4%	5%	6%	6%	11%	15%	25%	38%	41%
	5	5%	6%	7%	11%	14%	23%	35%	40%	43%
	10	5%	7%	9%	14%	20%	33%	40%	43%	46%
	15	7%	7%	12%	17%	30%	40%	44%	46%	52%
	20	9%	14%	20%	28%	37%	43%	47%	54%	62%
	25	12%	20%	27%	33%	43%	47%	56%	63%	70%
	30	20%	25%	31%	41%	48%	57%	63%	72%	74%
	35	23%	30%	38%	51%	58%	63%	70%	74%	81%
	40	28%	38%	51%	60%	63%	68%	77%	79%	81%
	45	37%	49%	60%	63%	69%	78%	78%	80%	83%
	50	47%	60%	64%	70%	77%	78%	79%	81%	86%

-  Near EPA 25% target qualification
-  Draft 2 spec (approximate)
-  Panasonic proposal

Implementation Schedule

- EPA proposed Tier 1 effective date is problematic
 - September 2008 in middle of model year production schedule
 - Lack of grandfathering compounds problem with effective date
 - Will lead to same models for sale; some with ENERGY STAR label and some not labeled
 - Will producer consumer confusion
- Better effective date: January or 1st Quarter 2009
 - Would better fit most manufacturers production schedules
- Concern over Tier 2 levels, effective date
 - If Tier 2 more stringent, than Tier 1 should serve as a “bridge” to more challenging specification