

ADSL Annex J PSD Masks

802.3ah Task Force - Kauai, Hawaii

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Doug Artman, Texas Instruments

George Ginis, Texas Instruments

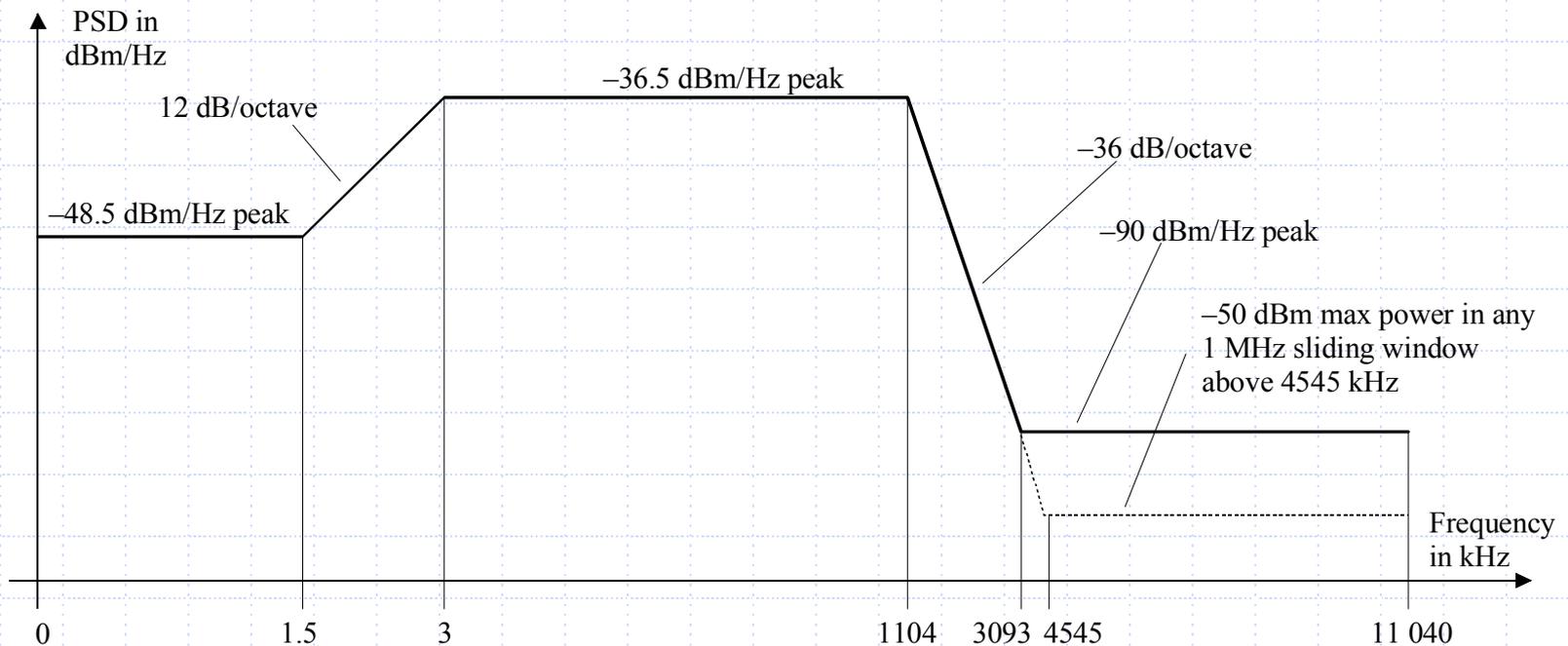


Downstream PSD Masks

ADSL Annex J Downstream PSD Masks

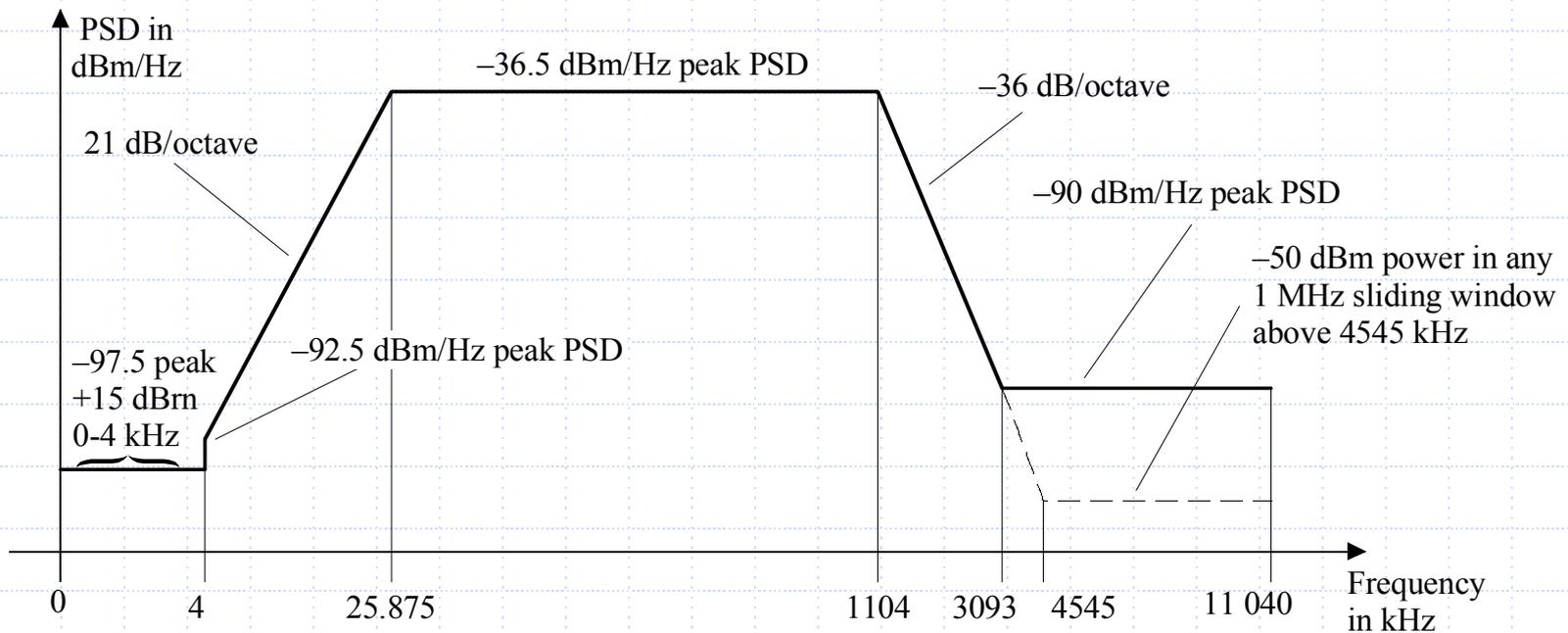
- ◆ 3 proposed Downstream PSD Masks
 - Overlapped spectrum, w/o POTS protection
 - ◆ Identical to mask specified in G.992.3 Section J.1.2/I.1.2
 - Overlapped spectrum, w/ POTS protection
 - ◆ Identical to mask specified in G.992.3 Section A.1.2
 - Non-overlapped spectrum, w/ or w/o POTS protection
 - ◆ Identical to mask specified in G.992.3 Section J.1.3/B.1.3

Downstream PSD - Overlapped Spectrum w/o POTS protection



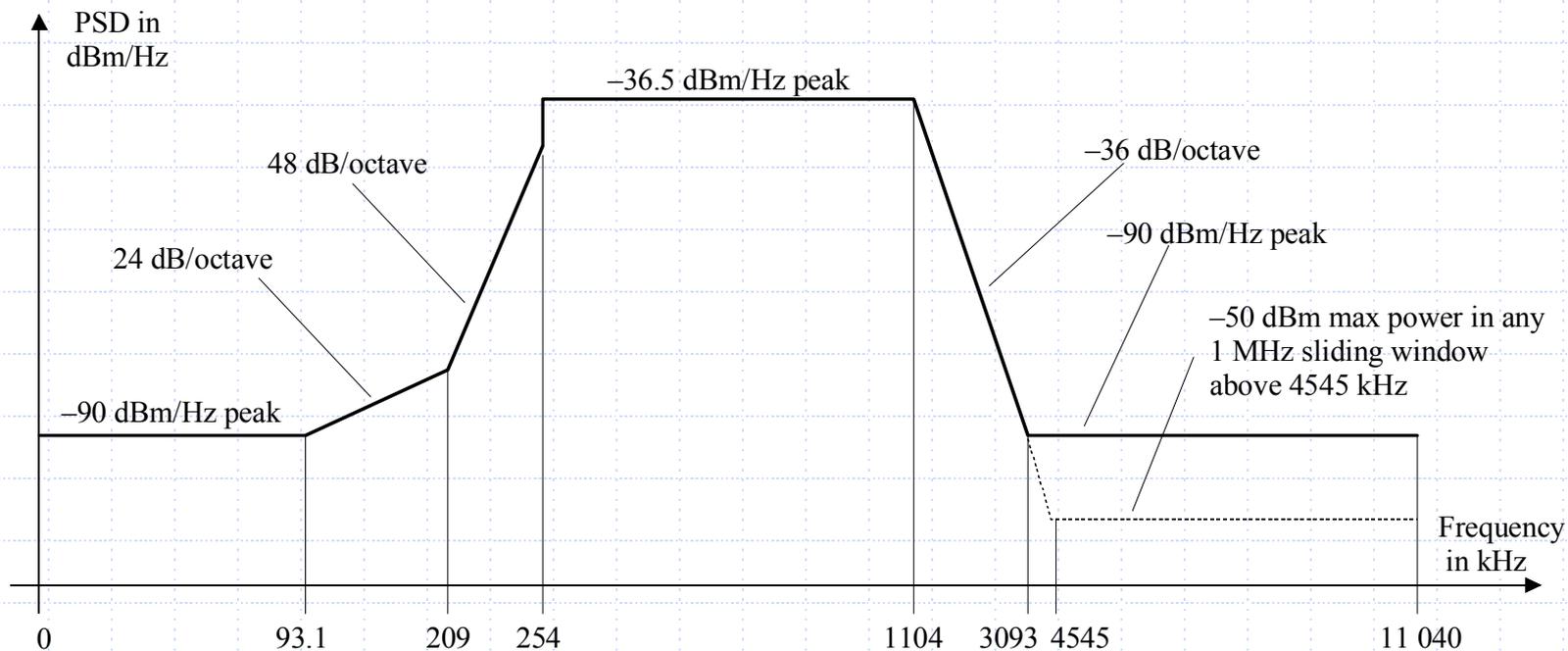
From G.992.3 Section I.1.2

Downstream PSD - Overlapped Spectrum w/ POTS protection



From G.992.3 Section A.1.2

Downstream PSD - Non-overlapped Spectrum w/ or w/o POTS protection



From G.992.3 Section B.1.3



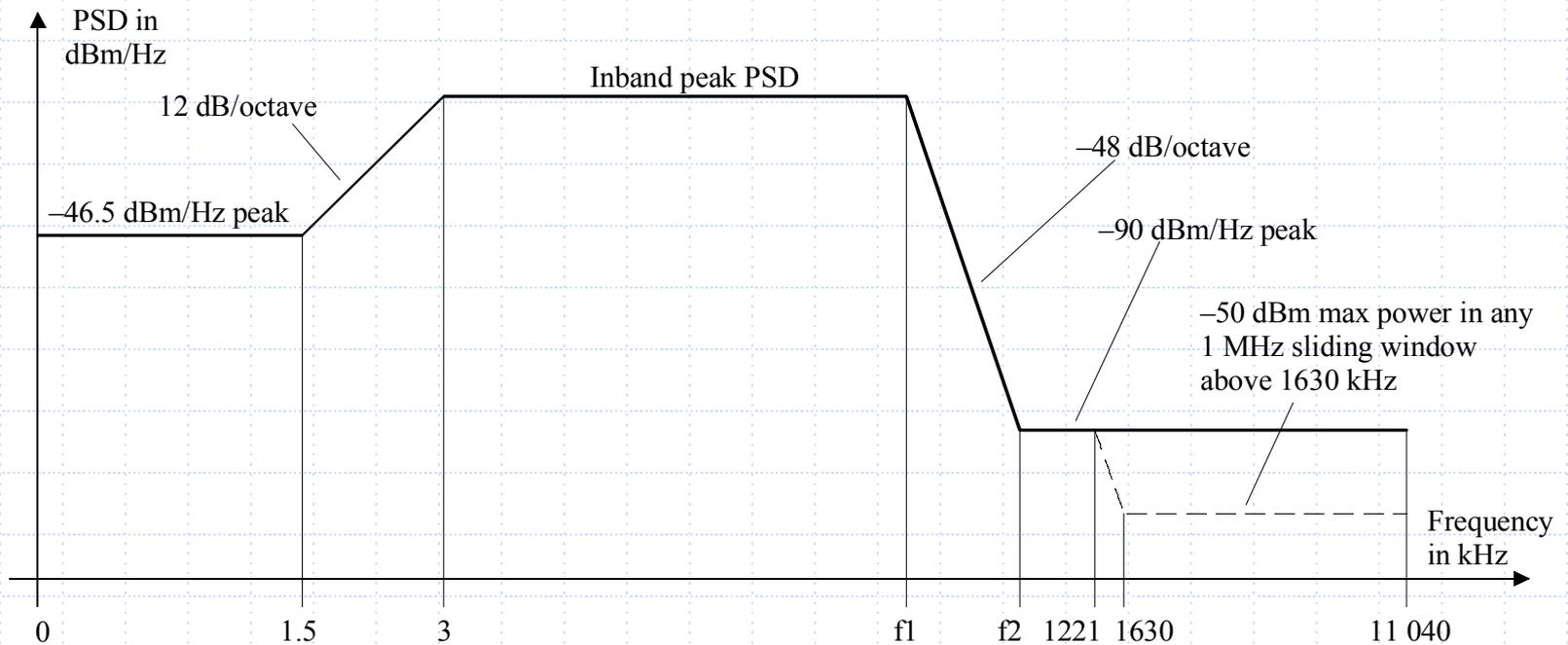
Upstream PSD Masks

ADSL Annex J Upstream PSD Masks

- ◆ 2 sets of Upstream PSD Masks
 - 1 set provides no POTS protection
 - ◆ Identical to set of PSDs specified in G.992.3 Section J.2.2
 - 1 set provides POTS protection
 - ◆ New set, hybrid of PSDs in G.992.3 Sections J.2.2 and A.2.2

- ◆ Each set provides a family of 9 PSD masks
 - Transmit power constant among all 9 masks
 - Masks differ in high frequency cutoff and passband PSD level
 - Widest PSD mask to be used out to its deployment guideline, and then fall back to narrower PSDs on longer loops

Upstream PSD - w/o POTS protection

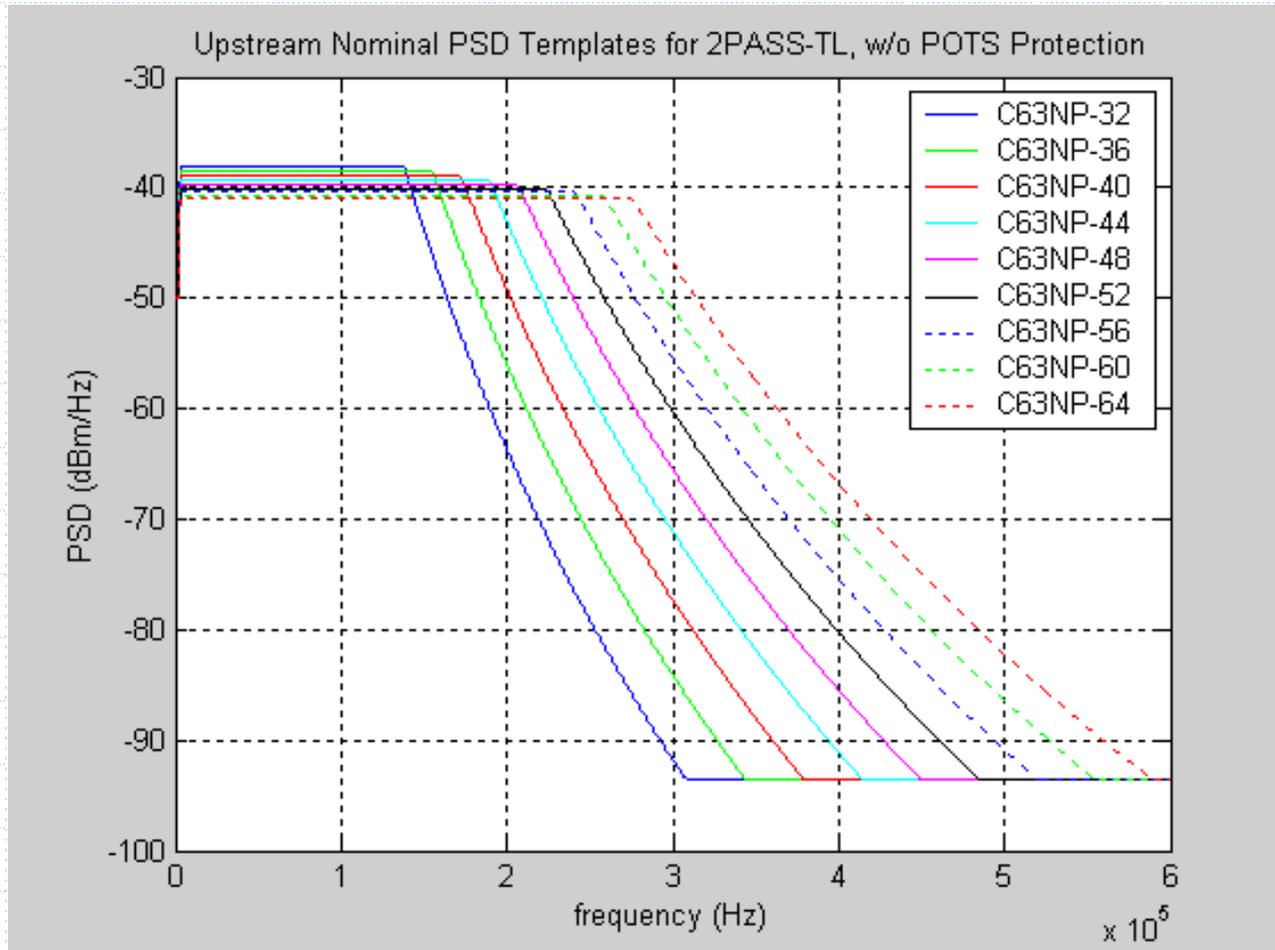


From G.992.3 Section J.2.2

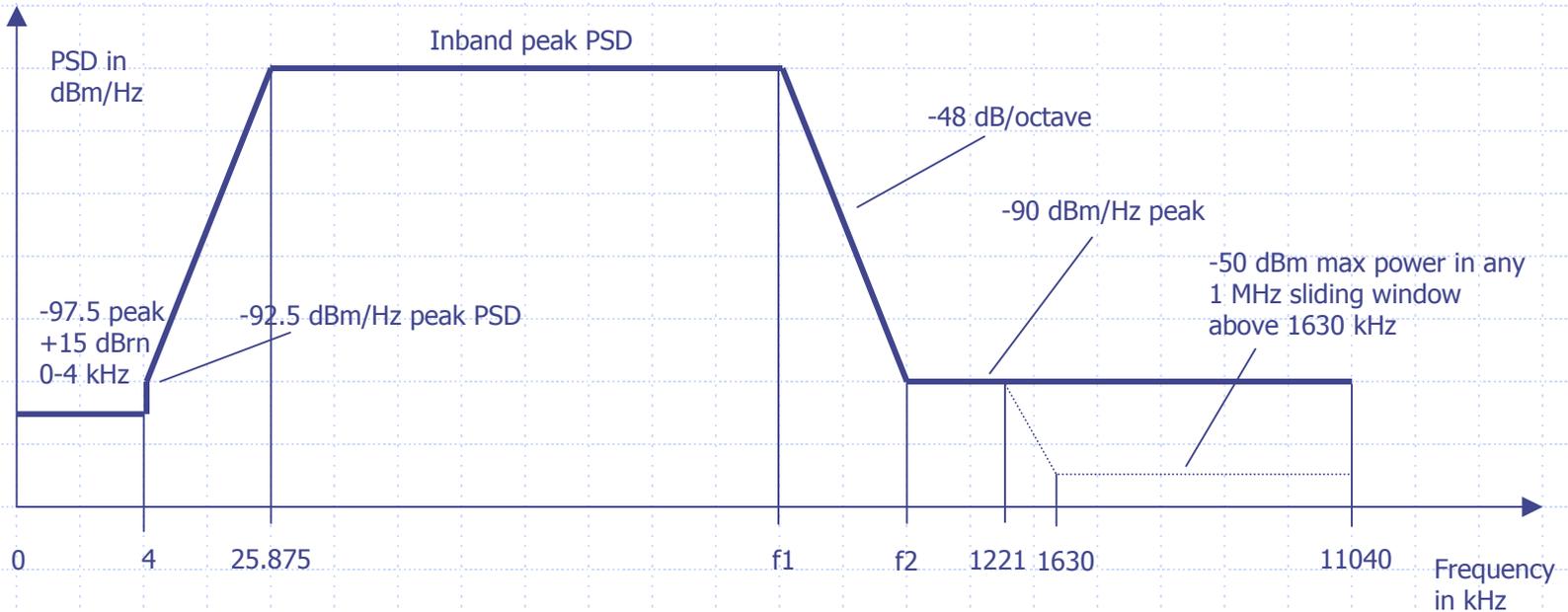
Upstream PSD - w/o POTS protection (cont'd)

Upstream Mask Number	Designator	Template Nominal PSD (dBm/Hz)	Template Maximum Aggregate Transmit Power (dBm)	Inband Peak PSD (dBm/Hz)	Frequency f1 (kHz)	Frequency f2 (kHz)
1	C63NP-32	-38.0	13.4	-34.5	138.00	307
2	C63NP-36	-38.5	13.4	-35.0	155.25	343
3	C63NP-40	-39.0	13.4	-35.5	172.50	379
4	C63NP-44	-39.4	13.4	-35.9	189.75	415
5	C63NP-48	-39.8	13.4	-36.3	207.00	450
6	C63NP-52	-40.1	13.4	-36.6	224.25	485
7	C63NP-56	-40.4	13.4	-36.9	241.50	520
8	C63NP-60	-40.7	13.4	-37.2	258.75	554
9	C63NP-64	-41.0	13.4	-37.5	276.00	589

Upstream Nominal PSDs - w/o POTS



Upstream PSD - w/ POTS protection



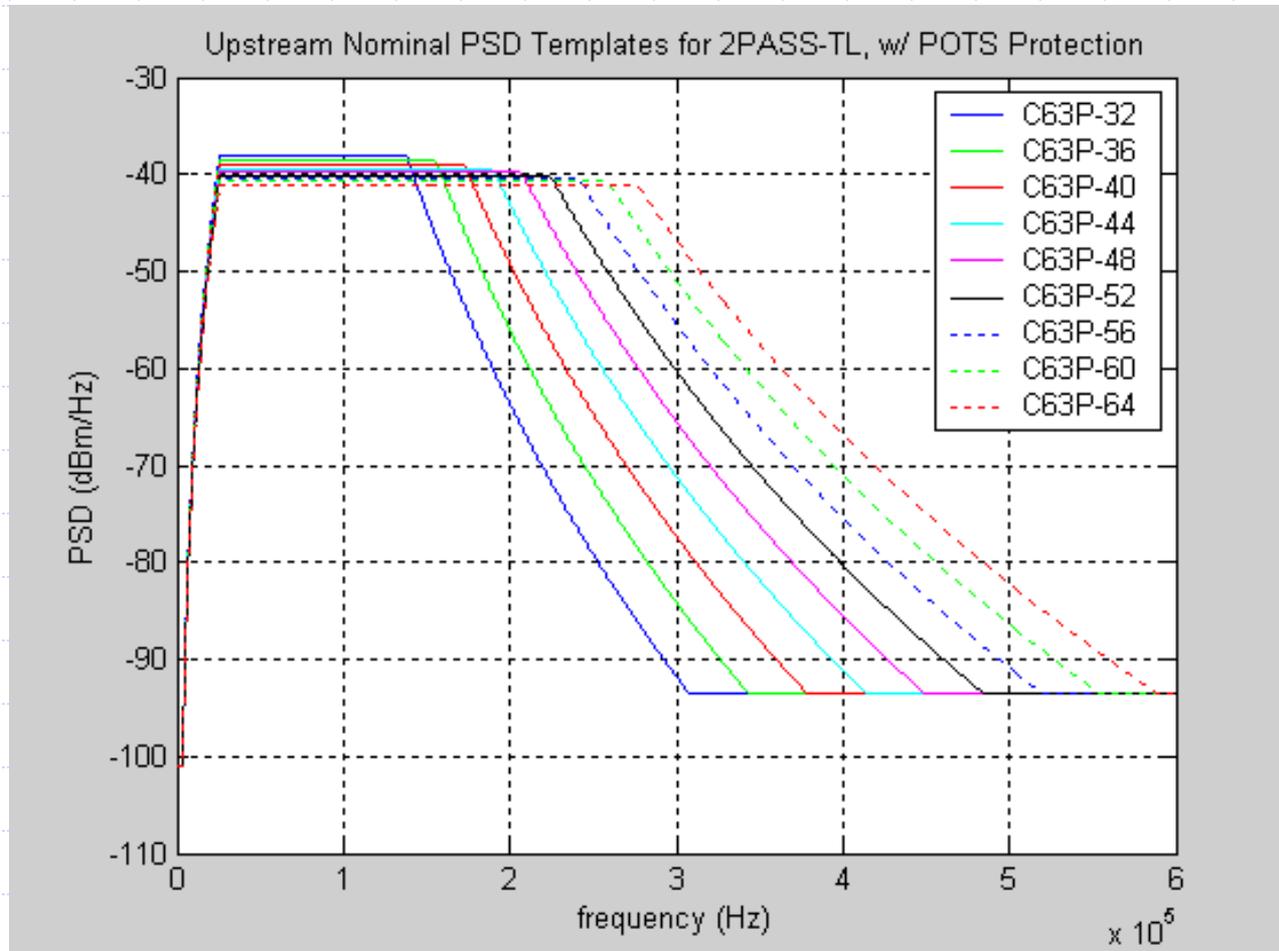
Upstream PSD Mask Definition - w/ POTS protection

Frequency Band (kHz)	Equation for Line (dBm/Hz)
$0 < f < 4$	-97.5
$4 < f < 25.875$	$-92.5 + (\text{NOMPSD} + 3.5 + 92.5) * \log_2(f/4) / \log_2(25.875/4)$
$25.875 < f < f_1$	$\text{NOMPSD} + 3.5$
$f_1 < f < f_2$	$\text{NOMPSD} + 3.5 - 48 * \log_2(f/f_1)$
$f_2 < f < 1221$	-90
$1221 < f < 1630$	-90 peak, max power in 1 MHz window of $-30 - 48 * \log_2(f/1221)$ dBm
$f > 1630$	-90 peak, max power in 1 MHz window of -50 dBm

Upstream PSD - w/ POTS protection (cont'd)

Upstream Mask Number	Designator	Template Nominal PSD (dBm/Hz)	Template Maximum Aggregate Transmit Power (dBm)	Inband Peak PSD (dBm/Hz)	Frequency f1 (kHz)	Frequency f2 (kHz)
1	C63P-32	-38.0	13.4	-34.5	138.00	307
2	C63P-36	-38.5	13.4	-35.0	155.25	343
3	C63P-40	-39.0	13.4	-35.5	172.50	379
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Upstream Nominal PSDs - w/ POTS



Upstream Nominal PSDs - w/ POTS (Zoom in on POTS transition band)

