

# CS50

## Gain and Output curves

(on 2cc and 711 couplers)

## ANSI measurements

(on 2cc coupler)

APRIL 2017

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The CS-50 has three Presets,

Each Preset has three user-selectable Environmental Modes:

Everyday (Omni Microphone)

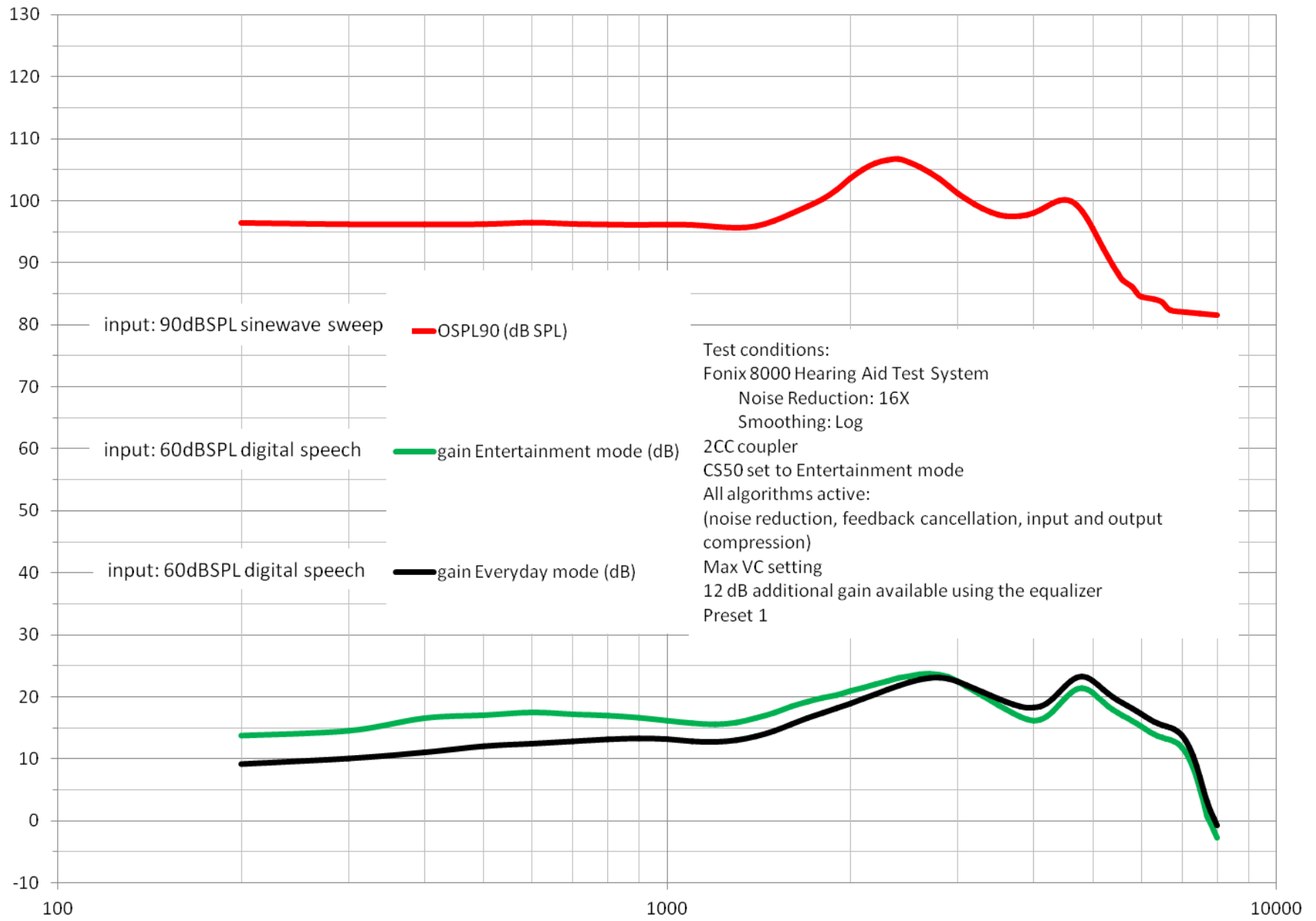
Restaurant (Equalized Directional Microphone)

Entertainment (Omni Microphone plus increased low frequencies)

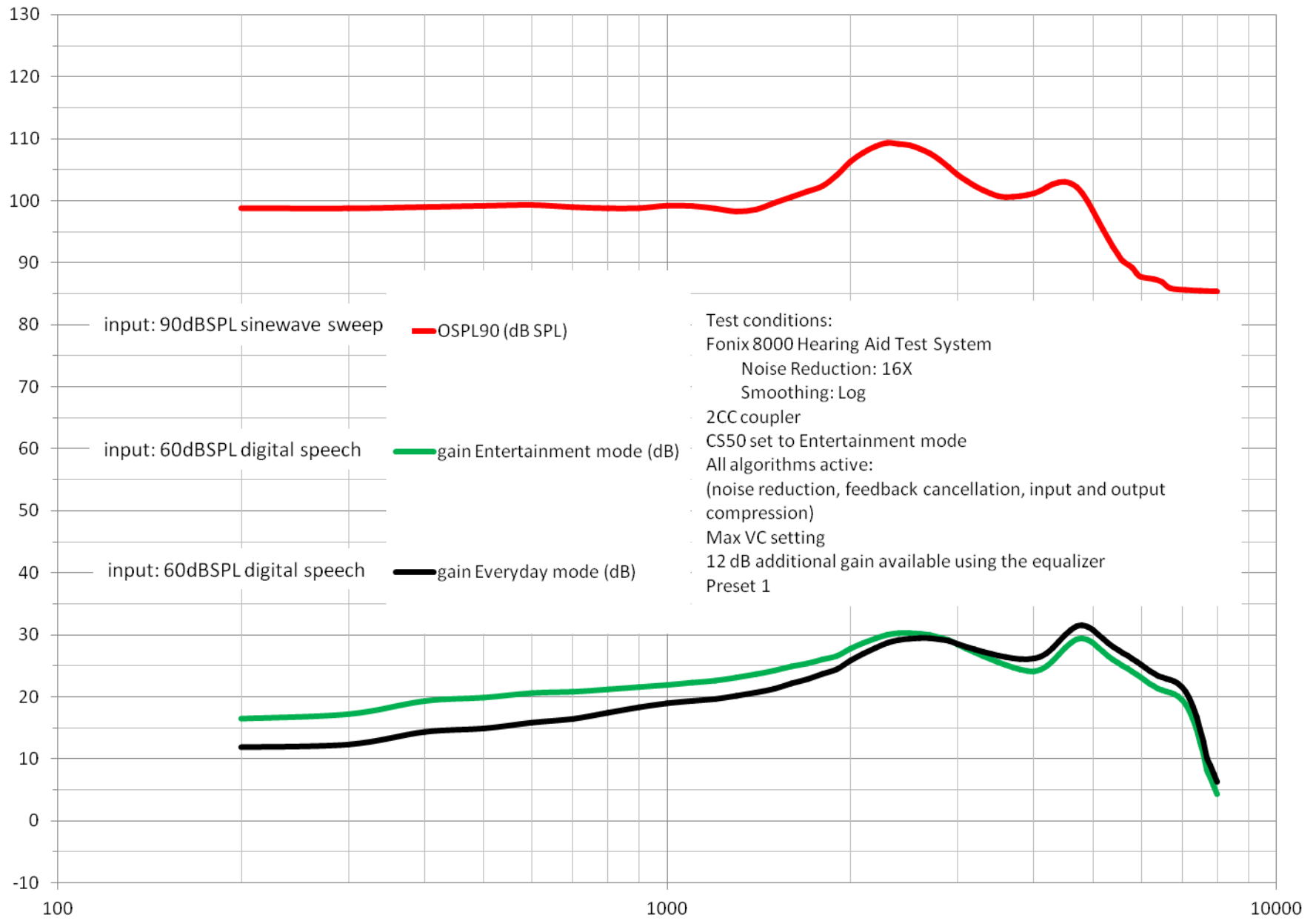
	Preset 1						Preset 2						Preset 3					
Environmental mode			Everyday		Entertainment				Everyday		Entertainment				Everyday		Entertainment	
test type	MPO	MPO	Gain	Gain	Gain	Gain	MPO	MPO	Gain	Gain	Gain	Gain	MPO	MPO	Gain	Gain	Gain	Gain
coupler	2cc	Ear Simulator	2cc	Ear Simulator	2cc	Ear Simulator	2cc	Ear Simulator	2cc	Ear Simulator	2cc	Ear Simulator	2cc	Ear Simulator	2cc	Ear Simulator	2cc	Ear Simulator
input level dB(SPL)	90.0	90.0	60.0	60.0	60.0	60.0	90.0	90.0	60.0	60.0	60.0	60.0	90.0	90.0	60.0	60.0	60.0	60.0
input type	sine, 64 Frequency	sine, 64 Frequency	digital speech	digital speech	digital speech	digital speech	sine, 64 Frequency	sine, 64 Frequency	digital speech	digital speech	digital speech	digital speech	sine, 64 Frequency	sine, 64 Frequency	digital speech	digital speech	digital speech	digital speech
PEAK	106.8	115.6	23.3	36.7	23.8	34.7	109.3	118.0	31.5	44.7	30.3	42.7	117.0	125.3	41.3	52.4	42.1	51.4
HFA	100.1	107.1	17.1	24.0	19.4	26.3	102.9	109.8	23.5	30.4	25.7	32.7	110.6	117.6	36.8	43.8	39.1	46.1

The following gain and output curves were taken in Everyday and Entertainment mode for all three Presets.

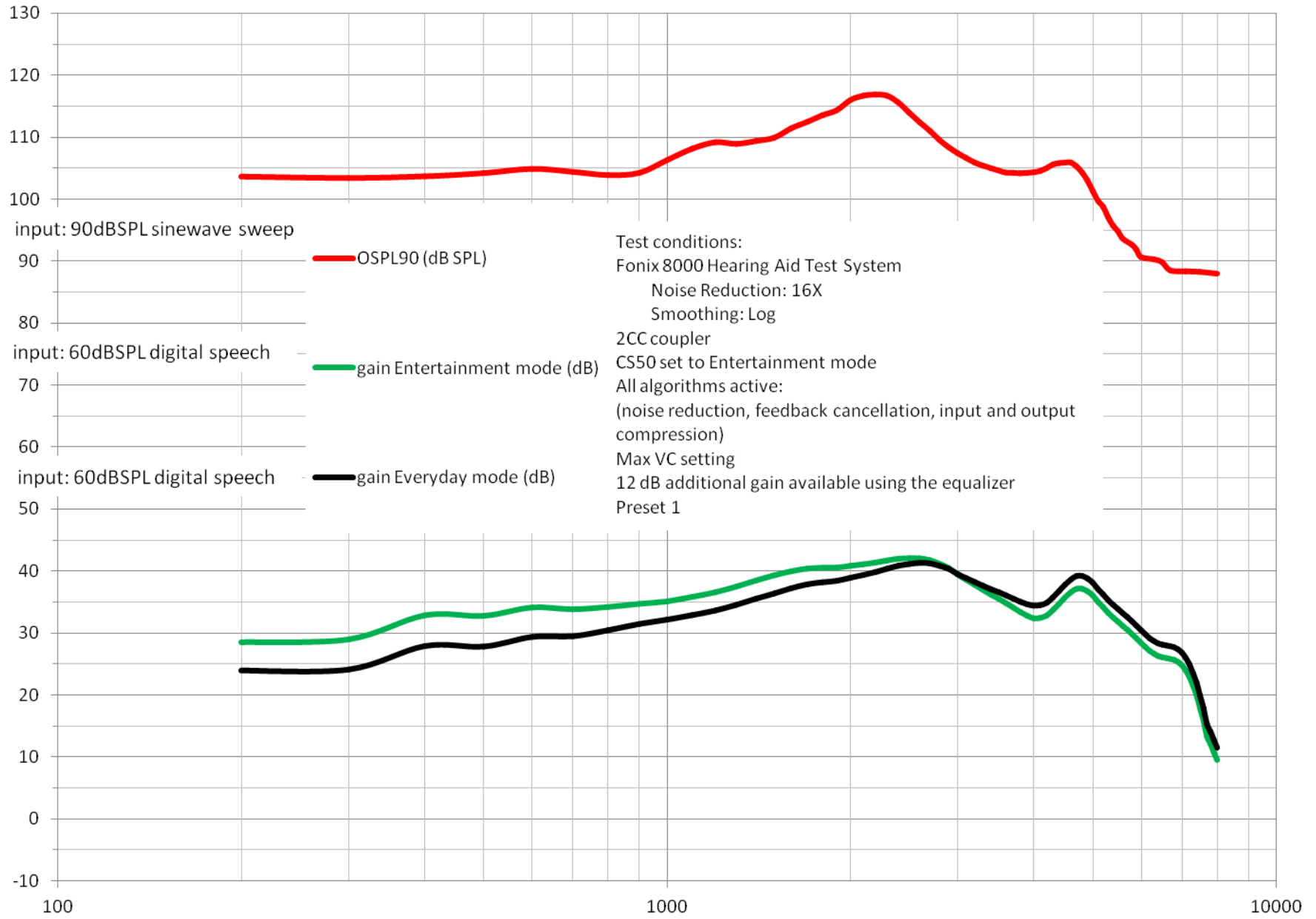
# CS 50 - Preset 1 - 2cc coupler



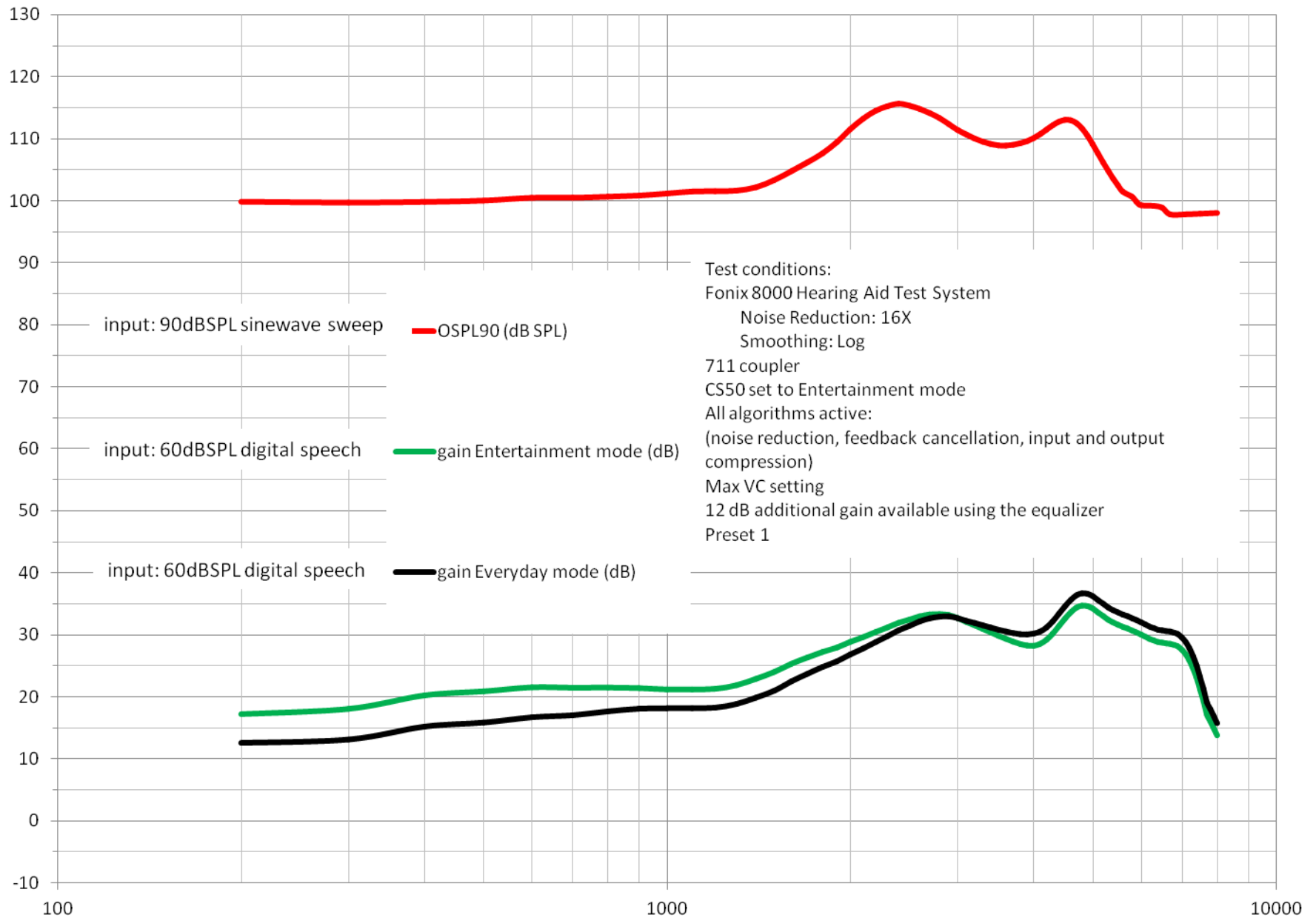
# CS 50 - Preset 2 - 2cc coupler



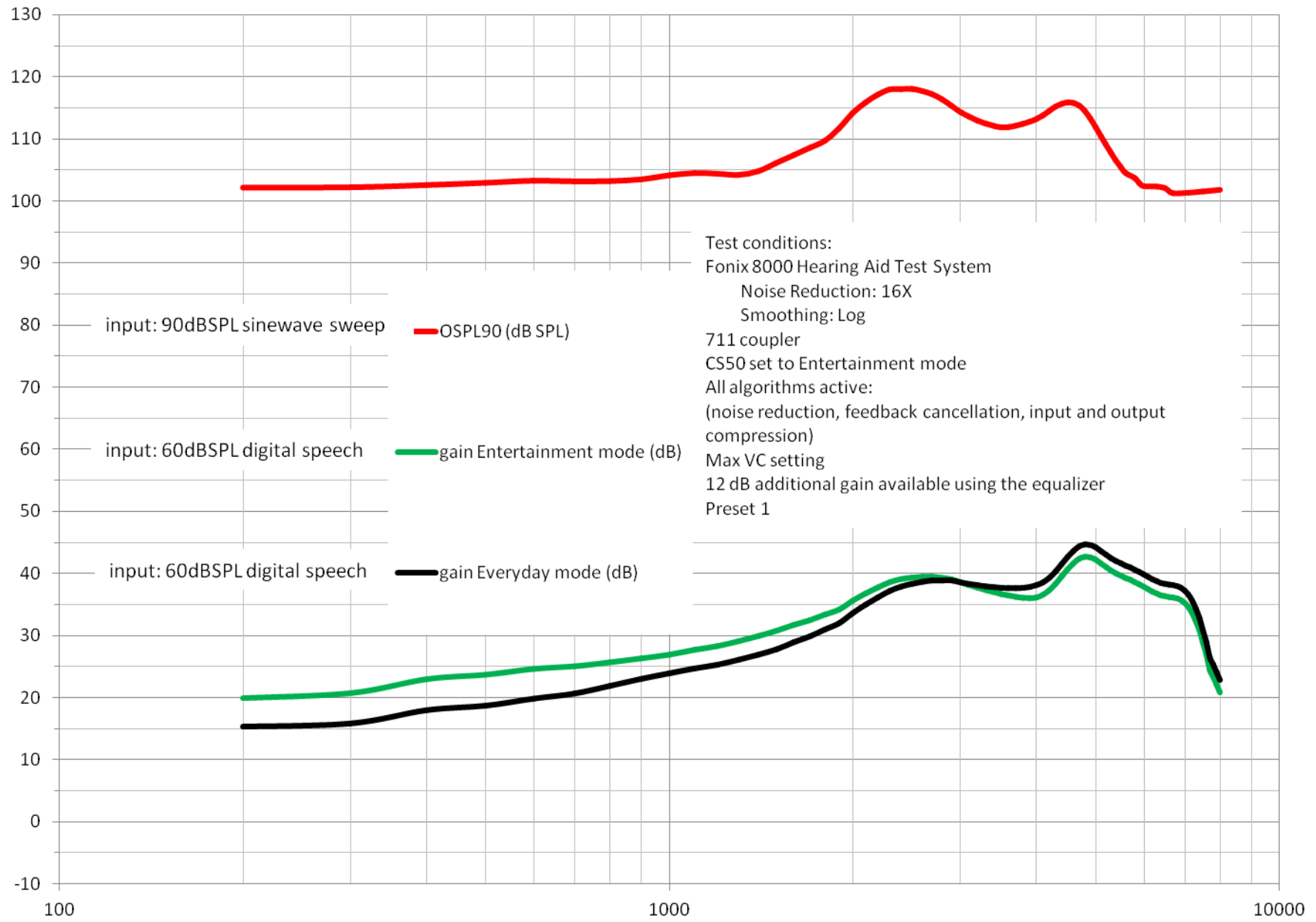
# CS 50 - Preset 3 - 2cc coupler



# CS 50 - Preset 1 - 711 coupler



# CS 50 - Preset 2 - 711 coupler



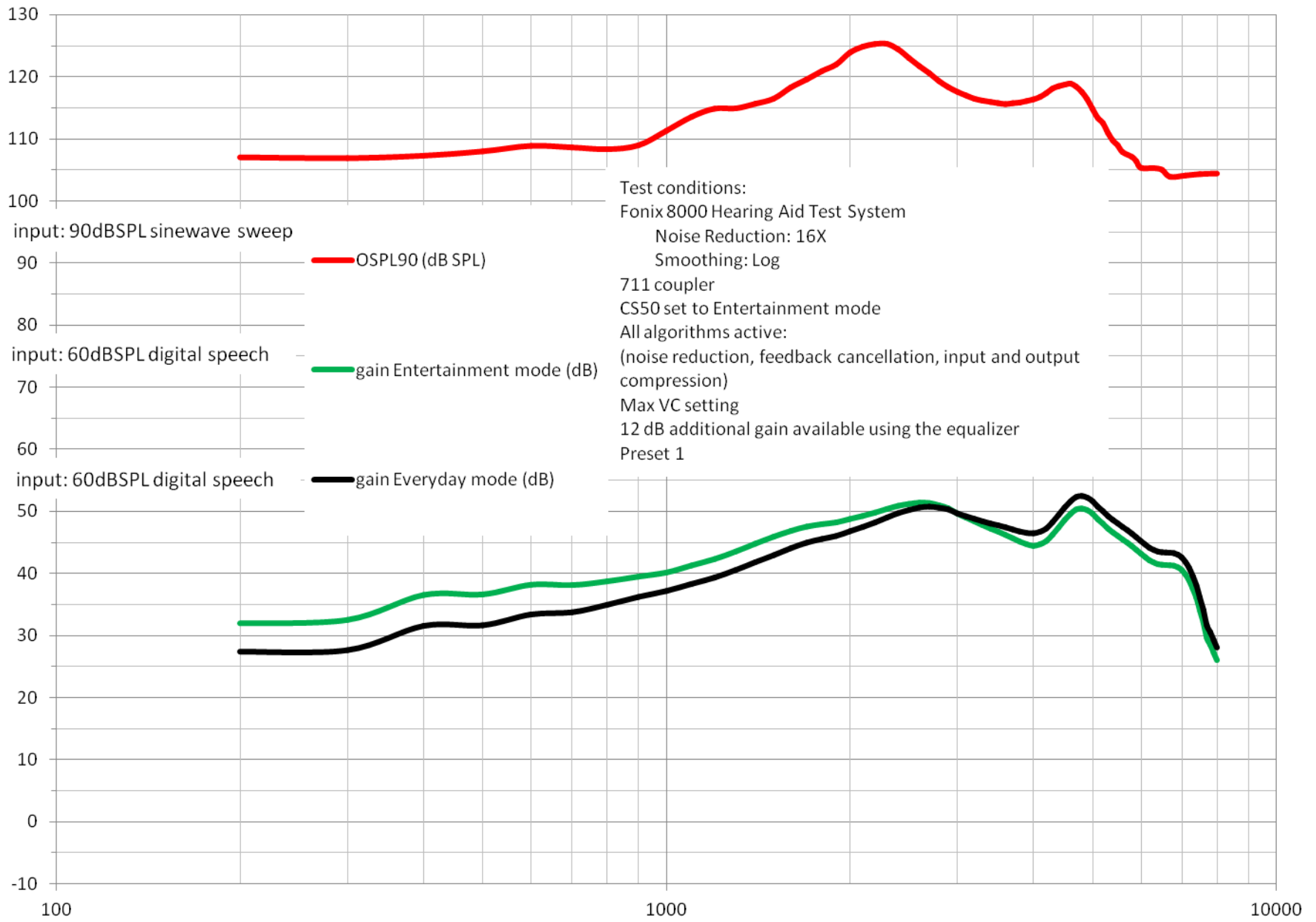
Test conditions:  
Fonix 8000 Hearing Aid Test System  
Noise Reduction: 16X  
Smoothing: Log  
711 coupler  
CS50 set to Entertainment mode  
All algorithms active:  
(noise reduction, feedback cancellation, input and output compression)  
Max VC setting  
12 dB additional gain available using the equalizer  
Preset 1

input: 90dB SPL sinewave sweep OSPL90 (dB SPL)

input: 60dB SPL digital speech gain Entertainment mode (dB)

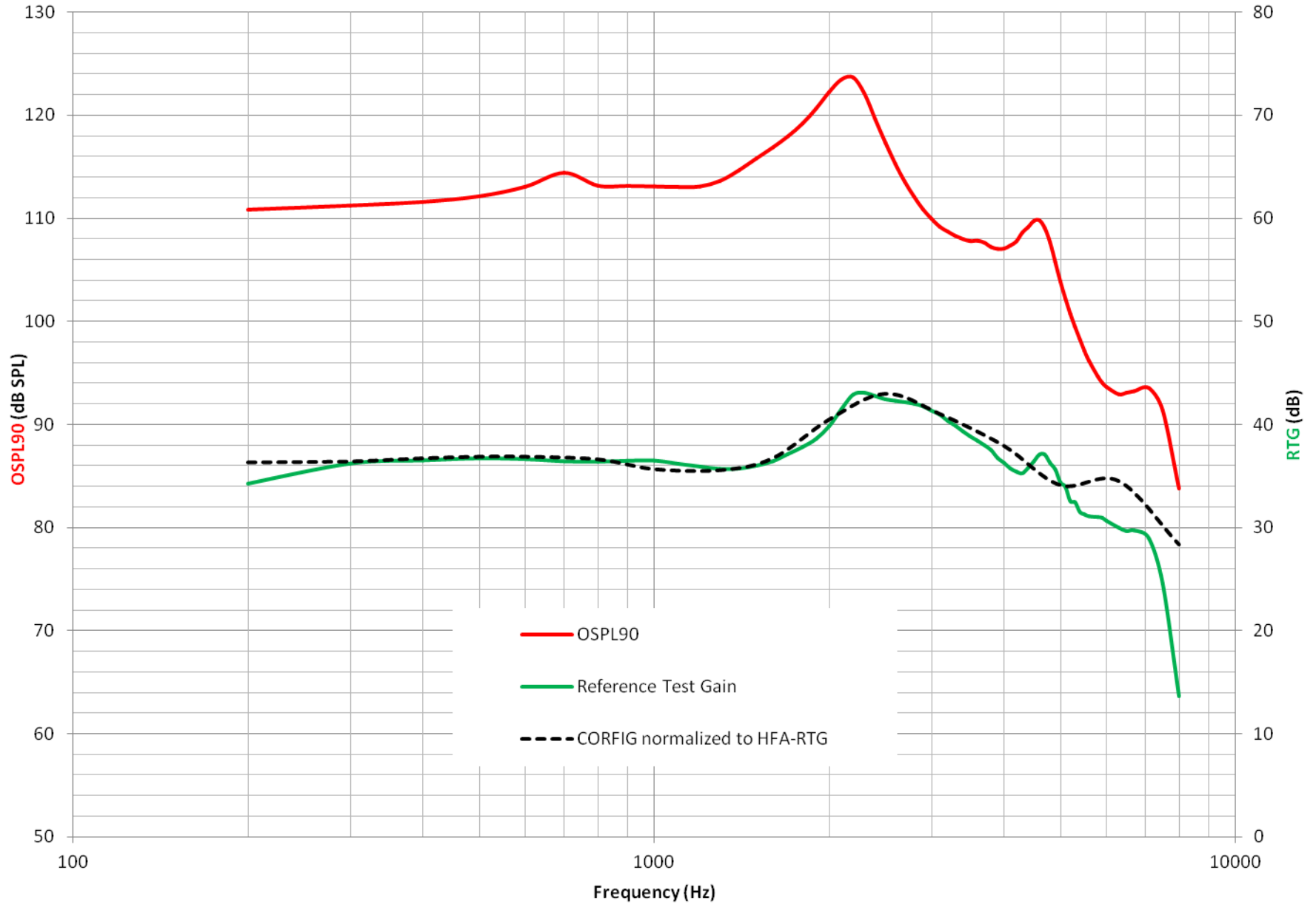
input: 60dB SPL digital speech gain Everyday mode (dB)

# CS 50 - Preset 3 - 711 coupler





# ANSI curves: CS 50 in 2cc coupler



**CS50 ANSI (2003) SPECIFICATION**

Conditions: 2cc coupler, Directional microphone disabled, Noise reduction and feedback cancellation disabled, Input compression disabled, Output compression set to maximum output level. **Equalizer set to 0dB. Equalizer can provide 12dB of additional reserve gain.**

RTG (60) (reference test gain)	PEAK	43.0
	(dB) HFA	38.8
FOG (50) (full on gain)	PEAK	50.5
	(dB) HFA	46.3
<b>gain numbers do not include the 12dB available reserve gain</b>		
OSPL90	PEAK	123.7
	(dB SPL) HFA	115.8
Total Harmonic Distortion (THD)		
% @input = (70 dB SPL)	500 Hz	0.8
(70 dB SPL)	800 Hz	1.3
(65 dB SPL)	1600 Hz	0.3
EIN (equivalent input noise)	(dB SPL)	25.9
Frequency range	min	<200
	(Hz) max	7915