

Supplemental Material S1. A repeated-measures ANOVA, treating input SNR, the number of background talkers, compression speed, and audiogram as the independent variables, the individual 2-second time windows as the random effects factor, and output SNR as the dependent variable.

Audiogram (A)	$F(3, 42) = 1.788, p = .164, \eta^2_p = .113$
Compression Speed (CS)	$F(1, 14) = 0.007, p = .935, \eta^2_p = 0$
Number of Talker (NT)	$F(1, 14) = 18.283, p = .001, \eta^2_p = .566$
Input SNR (IS)	$F(4, 56) = 7211.23, p < .001, \eta^2_p = .998$
A × CS	$F(3, 42) = 17.347, p < .001, \eta^2_p = .553$
A × NT	$F(3, 42) = 12.566, p < .001, \eta^2_p = .473$
CS × NT	$F(1, 14) = 20.086, p = .001, \eta^2_p = .589$
A × CS × NT	$F(3, 42) = 6.1, p < .05, \eta^2_p = .303$
A × IS	$F(12, 168) = 34.062, p < .001, \eta^2_p = .709$
CS × IS	$F(4, 56) = 37.975, p < .001, \eta^2_p = .731$
A × CS × IS	$F(12, 168) = 6.341, p < .001, \eta^2_p = .312$
NT × IS	$F(4, 56) = 47.144, p < .001, \eta^2_p = .771$
A × NT × IS	$F(12, 168) = 4.194, p < .001, \eta^2_p = .231$
CS × NT × IS	$F(4, 56) = 21.259, p < .001, \eta^2_p = .603$
A × CS × NT × IS	$F(12, 168) = 11.328, p < .001, \eta^2_p = .447$