Supplementary Information for:

Functional Organization of Mouse Primary Auditory Cortex in adult C57BL/6 and F1 (CBAxC57) mice

Zac Bowen, Daniel E. Winkowski, Patrick O. Kanold

Department of Biology, University of Maryland, College Park, MD 20742
Supplementary Figures

**Supplementary Figure S1. Binarized receptive field sum results.**

A) Receptive field sum plotted against binarized RFS. Each point represents one neuron. B) Receptive field sum split up by sound level. Sum is taken across rows in of the receptive field and then averaged across all neurons. ** indicates significance between C57BL/6 and F1 (CBAxC57) at p<0.01 (Wilcoxon rank sum test). C) Cumulative distribution functions of receptive field sum values in C57BL/6 (blue) and F1 (CBAxC57) (orange) mouse strains in both L2/3 (left) and L4 (right).
Supplementary Tables

| L2/3 | L4 |
|------|----|
|      | 80dB | 60dB | 40dB | 20dB | 80dB | 60dB | 40dB | 20dB |
| C57BL/6 | 0.028 | 0.034 | 1.1x10^{-3} | 3.0x10^{-4} | 1.3x10^{-3} | 0.40 | 5.5x10^{-3} | 4.2x10^{-5} |
| Emx-TetO-GC6 | 1.3x10^{-5} | 0.048 | 0.30 | 1.7x10^{-3} | 1.8x10^{-6} | 0.10 | 0.17 | 1.0x10^{-3} |
| Thy1-GC6 | 0.07 | 0.23 | 7.1x10^{-6} | 0.034 | 0.73 | 0.80 | 7.6x10^{-3} | 8.8x10^{-3} |

Supplementary Table S1. Statistical comparison to F1 (CBAxC57) RFS Profile.
P-values returned from Wilcoxon rank sum test between the listed quantity and the F1 (CBAxC57) values for Figure 2H.

| L2/3 | L4 |
|------|----|
| C57BL/6 (N=11) | F1 (CBAxC57) (N=18) | p-val and test |
| Median BF | 4.00 (0.75) | 5.00 (1) | 0.06 (rank sum) |
| IQR of BF | 1.50 (0.86) | 1.69 (0.5) | 0.14 (rank sum) |
| STD of BF | 0.96 (0.25) | 1.16 (0.26) | 5.0x10^{-5} (rank sum) |
| Median CF | 4.00 (1) | 5.00 (0) | 0.07 (rank sum) |
| IQR of CF | 1.00 (0.64) | 1.50 (0.75) | 0.14 (rank sum) |
| STD of CF | 0.82 (0.41) | 1.15 (0.17) | 3.1x10^{-6} (t-test) |

Supplementary Table S2. Distribution statistics for BF and CF measures.
Median value and IQR are displayed for each quantity in Figure 3. All values are in octaves. Reported p-values were calculated using Wilcoxon rank sum test or two-sample t-test depending on normality.

| L2/3 | L4 |
|------|----|
| C57BL/6 (N=20492) | F1 (CBAxC57) (N=67147) | p-val and test |
| Sig. Corr. | 0.16 (0.37) | 0.13 (0.34) | 1.6x10^{-9} (rank sum) |
| Noise Corr. | 0.04 (0.14) | 0.05 (0.15) | 5.4x10^{-11} (rank sum) |

Supplementary Table S3. Distribution statistics for signal and noise correlations.
Median value and IQR are displayed for each distribution of correlations in Figure 5. Reported p-values were calculated using Wilcoxon rank sum test.

| L2/3 | L4 |
|------|----|
| C57BL/6 | F1 (CBAxC57) |
| Signal Correlations | 3-6kHz | 6-12kHz | 12-24kHz | 24-48kHz |
| p-val | 0.30 | 0.23 | 5.1x10^{-6} | 3.5x10^{-5} |
| Noise Correlations | 3-6kHz | 6-12kHz | 12-24kHz | 24-48kHz |
| p-val | 8.8x10^{-10} | 2.4x10^{-9} | 1.9x10^{-8} | 6.9x10^{-5} |

Supplementary Table S4. Distribution statistics for correlations in each BF band.
Median value and IQR are displayed for each distribution of correlations in Figure 6. Reported p-values were calculated using Wilcoxon rank sum test.