Supplementary materials for:

Passive and Active Shaping of Unitary Responses from
Associational/Commissural and Perforant Path Synapses in Hippocampal CA3
Pyramidal Cells

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Supplementary Figure 1. Intensity-amplitude relationships for A/C and PP AMPA and NMDA EPSPs evoked by minimal stimulation

Scatterplot of AMPA EPSPs successes and failures at different stimulus intensities for A/C (a) and PP inputs (b). Scatterplot of NMDA EPSPs successes and failures at different stimulus intensities for A/C (c) and PP inputs (d). Examples of successes and failures appear at the top of each graph.
Supplementary Figure 2. Data analysis schematics

(a) Schematic diagram of parameter extraction (see Methods). (b) Automatic categorization of experimental data traces. Examples shown were taken from PP AMPA responses in a single set of experimental dataset. Vertical dashed lines indicate the time of the stimulus artifact that was previously removed from the data sweep. Of the 33 sweeps categorized in this example, 5 were either rejected or of undetermined category, 8 were failures, 3 were multi-peak responses, and 17 were single-peak responses. (c), Selection of putative unitary sweeps. Estimated failure rate was $8/(8+3+17) = 29\%$ giving 9 expected unitary responses among the single-peak responses (see Methods). Single-peak responses were categorized as either unitary (open circle) or non-unitary (open square) based on the ordinal value when the single-peak sweeps were sorted by peak value. Failures (solid dot) are shown for comparison; note, however, that categorization of failures involves multiple factors in addition to the maximum attained response value and that failure PVs are not considered in the unitary selection process beyond the initial categorization of individual sweeps.
Supplementary Figure 3. Sweep categorization flowchart.

The process of automatically assigning categories to individual data sweeps is shown here in flowchart form. See Methods and the Appendix in the main document for further details concerning the data analysis procedures and parameters.
Supplementary Figure 4. Proximal and distal somatic A/C AMPA uEPSPs have similar amplitude and kinetic parameters

Comparison of cumulative probability distributions for PV (left), TTP (center), and HHW (right) of AMPA uEPSPs evoked from proximal and distal radiatum. No significant differences were found in amplitude and kinetic parameters. Insets: Mean and s.d. of the unitary values (circle) for PV (left), TTP (center), and HHW (right) of AMPA uEPSPs.

Supplementary Figure 5. Proximal and distal somatic A/C AMPA uEPSCs have similar amplitude and kinetic parameters

Comparison of cumulative probability distributions for PV (left), TTP (center), and HHW (right) from AMPA uEPSCs evoked from proximal and distal radiatum. No significant differences were found in amplitude and kinetic parameters. Insets: Plots Mean and s.d. of the unitary values (circle) for PV (left), TTP (center), and HHW (right) of AMPA uEPSCs.
Supplementary Figure 6. A/C NMDA uEPSC recorded in VC and passive VC have similar amplitudes. Peak values of A/C AMPA uEPSCs recorded in VC and passive VC at either $V_m = -65$ or $-80$ mV.