Supp. Fig. 1. Histology of PV+ and other interneurons in APC. Sagittal sections of APC from PV-tomato mouse were stained against interneuron markers calretinin, calbindin (D28k), CCK and somatostatin together with DAPI, a nuclear marker. PV cells formed distinct populations from calretinin, CCK and somatostatin neurons. Approximately 50% of PV cells also express calbindin, corroborating the results of Suzuki and Bekkers (2010).
Supp. Fig. 2. Behavioral abnormalities in mice containing targeted deletion of TrkB in PV neurons. (a) Hindlimb clasping behavior was observed in PV-TrkB−/− mice but not in control littermate (PV-TrkB+/–). Circling behavior and head tilt were also observed in PV-TrkB−/− mice. (b) Hyperactive motor behavior was evidenced by a larger overall distance traveled over a period of 10 min. Left panel shows tracks of mice in an enclosed arena over a period of 10 min, and right panel is the distribution of travel speed over the same time period. ***, P < 0.001.
Supp. Fig. 3. Lack of gross changes to PV cell neuroanatomy following TrkB deletion. (a,b) Sagittal confocal sections for PV-TrkB+/– and PV-TrkB–/– brains showed that gross formation of cortical layers was unaffected by deletion of TrkB in PV cells. PV cells were labeled by Tomato. (a) More medial section at the level of olfactory bulb (OB). (b) More lateral section (~ 2 mm from that of olfactory bulb) at the level of anterior piriform cortex (APC). HC, hippocampus. Str, striatum. Ctx, cortex. Th, thalamus.
Supp. Fig. 4. Synaptotagmin-2 is expressed in PV axons and boutons in the APC. Confocal images showing that synaptotagmin-2 (Syt2) colocalized with Tomato+ PV axons and boutons in APC. TrkB deletion in PV cells reduced the number and density of Syt2+ perisomatic boutons. *, P < 0.05. ***, P < 0.001.
Supp. Fig. 5. Functional expression of ChR2 in PV cells in APC. (a) AAV2/9-flex-ChR2-YFP (100 nl) was injected stereotaxically into the APC in vivo using the indicated coordinates. Two to three weeks after injection, a fixed brain section shows the correct targeting of virus to the APC (demarcated by arrowheads). APC, anterior piriform cortex; Ctx, cortex; Hc, hippocampus; Str, striatum. (b) Higher zoom image showing expression of ChR2 in PV-tomato cells in APC. (c) Strong light-induced, ChR2-mediated currents were recorded in PV cells (Vh = −70 mV). (d) Two recorded, biocytin-filled principal cells in layer 2 of the APC. (e) In regular artificial cerebrospinal fluid (2.5 mM Ca2+), paired-pulse light stimulation elicited robust IPSCs in principal cells that are blocked by gabazine, a specific GABAA receptor antagonist.