

Table S1 Statistical analyses for Figures 1-5 and S1-S3

									Condition 1		Condition 2		Remarks	
Parameter	Comparison	n per condition	Statistic	Value	z-value	p-value	Effect size	Mean/ Mdn	SD / MAD	Mean/ Mdn	SD / MAD			
Figure 1														
D	Dendrite Length in fov	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=44; n2=45	t (87)	4.23	4.02	0.00006	0.896	3.22	1.10	2.27	1.03	1 outlier removed (PL rescue) based on dendrite length (5.7mm) Reason: possibly other cell type	
E	Synapse count	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=44; n2=45	t (87)	3.61	3.48	0.00051	0.766	877.18	432.36	576.98	347.78		
F	Synapse density	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=44; n2=45	t (77.55)	0.29	0.29	0.77079	0.062	261.41	70.91	255.88	104.61		
G	Synapse area	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=44; n2=45	U	2083.50	0.85	0.39672	0.090	1.22	0.10	1.20	0.16		
H	Sholl analysis	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=44; n2=45	F (1,87)	13.43	NA	0.00043	0.366	NA	NA	NA	NA		
Figure 2														
B	EPSC amplitude	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (45)	2.57	2.47	0.01364	0.749	10.67	6.79	6.03	5.54	1 outlier removed (WT rescue) based on EPSC amplitude (35 nA) Reason: proper voltage clamp cannot be assured	
C	EPSC charge	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (45)	1.47	1.45	0.14723	0.430	118.99	86.72	84.67	72.47		
D	Time to peak	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (39.32)	-0.75	-0.75	0.45601	-0.218	7.07	1.27	7.43	1.98		
E	A _{slow} /A _{total}	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (30.36)	-3.76	-3.38	0.00073	-1.079	0.04	0.03	0.10	0.07		
F	τ _{fast}	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (37.59)	-0.80	-0.79	0.42876	-0.231	7.10	1.65	7.63	2.79		
F	τ _{slow}	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=21; n2=24	t (43)	-0.04	-0.04	0.96850	-0.012	69.76	32.06	70.12	27.82	Decays with a relative slow contribution of <1% were considered monoexponential and not to have a τ _{slow} .	
G	Async frac EPSC charge	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (45)	-8.18	-6.37	0.00000	-2.386	0.17	0.06	0.36	0.09		
I	Norm. EPSC Amp 20Hz	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=17; n2=17	t (22.85)	1.93	1.84	0.06568	0.663	0.22	0.15	0.14	0.07		
J	Tot. Charge 20Hz	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=17; n2=17	t (21.73)	1.65	1.59	0.11268	0.567	8.49	7.23	5.33	3.11		
J	Async fraction 20Hz	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=17; n2=17	t (32)	-4.71	-4.08	0.00005	-1.616	0.47	0.11	0.64	0.09		
K	Tail current τ	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=17; n2=17	t (32)	-3.44	-3.15	0.00162	-1.181	0.21	0.12	0.33	0.09		
M	Tot. Charge 40Hz	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=17; n2=17	t (21.73)	1.65	1.59	0.11268	0.567	8.49	7.23	5.33	3.11		
N	RRP estimate	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (45)	1.80	1.76	0.07923	0.524	1.11	0.75	0.77	0.51		
N	Recruitment rate	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (45)	1.11	1.10	0.27227	0.324	1.50	1.26	1.13	1.02		
Figure 3														
B	Dendrite Length in fov	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=40; n2=39	t (77)	2.39	2.34	0.01926	0.538	4.36	1.35	3.61	1.45		Removed n=5 (1xWT;4xPL) amplitude outliers (>19nA). Reason: proper voltage clamp cannot be assured
C	Synapse count	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=40; n2=39	t (77)	2.38	2.33	0.01957	0.537	906.78	362.31	704.97	389.71		
D	Synapse density	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=40; n2=39	t (66.92)	0.74	0.73	0.46333	0.167	207.50	57.21	195.57	83.80		
E	Synapse area	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=40; n2=39	t (77)	-1.15	-1.14	0.25416	-0.259	2.04	0.33	2.13	0.38		
F	Sholl analysis	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=40; n2=39	F (1,77)	4.40	NA	0.03900	0.2326	NA	NA	NA	NA		
Figure 4														
B	EPSC amplitude	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (50)	1.34	1.32	0.18572	0.372	4.88	3.42	3.65	3.22	Removed n=5 (1xWT;4xPL) amplitude outliers (>19nA). Reason: proper voltage clamp cannot be assured	
C	EPSC charge	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (50)	0.64	0.63	0.52694	0.177	63.51	51.51	54.58	49.46		
D	Time to peak	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (50)	1.95	1.91	0.05676	0.541	8.36	1.30	7.67	1.24		
E	A _{slow} /A _{total}	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (50)	-3.85	-3.58	0.00034	-1.067	0.04	0.02	0.06	0.03		
F	τ _{fast}	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (50)	-1.45	-1.43	0.15193	-0.404	7.29	1.76	8.10	2.23		
F	τ _{slow}	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=25; n2=26	t (49)	0.31	0.30	0.76089	0.086	75.25	29.82	72.65	30.96		
G	Async frac EPSC charge	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (42.96)	-5.03	-4.44	0.00001	-1.396	0.17	0.06	0.28	0.09		
I	Norm. Amp 20Hz	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=24; n2=24	t (29.79)	-1.58	-1.53	0.12557	-0.455	0.12	0.05	0.17	0.14		
J	Tot. Charge 20Hz	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=24; n2=24	U	664.0	1.56	0.11952	0.225	2.10	1.25	1.81	0.91		
	Async fraction 20Hz	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=24; n2=24	t (46)	-2.66	-2.55	0.01073	-0.768	0.58	0.08	0.64	0.09		
K	Tail current τ	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=24; n2=24	t (30.32)	-2.07	-1.98	0.04718	-0.597	0.30	0.13	0.45	0.33		
M	Tot. Charge 40Hz	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=25	U	688.0	0.22	0.82845	0.030	1.42	0.76	1.50	0.63		
N	RRP estimate	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=25	t (49)	0.38	0.38	0.70262	0.108	0.53	0.39	0.49	0.32		
	Recruitment rate	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=25	t (49)	1.05	1.04	0.29963	0.294	0.70	0.64	0.54	0.36		
Figure 5														
B	mEPSC frequency	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=19; n2=19	t (20.77)	-5.40	-4.22	0.00002	-1.751	22.26	14.86	90.90	53.42	While Levene's test was positive for some sholl radii, residual plots indicated no large deviations from homoscedasticity, so no data transformations were applied.	
	mEPSC amplitude	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=19; n2=19	t (36)	-2.20	-2.11	0.03463	-0.712	24.40	6.19	29.39	7.76		
D	mEPSC frequency	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=20; n2=20	U	283.0	-3.42	0.00062	-0.541	15.42	11.12	47.03	21.10		
	mEPSC amplitude	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=20; n2=20	U	382.0	-0.74	0.45695	-0.118	19.78	2.51	19.95	4.11		
F	mEPSC frequency	KO+GFP vs KO+Syt1 ^{PL}	n1=21; n2=21	U	301.0	-3.77	0.00016	-0.582	13.29	8.51	48.30	24.47		
	mEPSC amplitude	KO+GFP vs KO+Syt1 ^{PL}	n1=21; n2=21	t (40)	-2.14	-2.07	0.03817	-0.662	20.44	6.25	24.29	5.36		
J	Dendrite Length in fov	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=32; n2=31	t (61)	-1.34	-1.32	0.18579	-0.337	4.65	2.17	5.53	3.00		
K	Sholl analysis	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=32; n2=31	F (1,61)	2.15	NA	0.14808	0.1843	NA	NA	NA	NA		
Figure S1														
C	GFP intensity	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=35; n2=34	t (67)	0.68	0.67	0.49985	0.163	4.76	2.84	4.27	3.22		
	Syt1 intensity	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=35; n2=34	t (59.29)	0.63	0.63	0.53035	0.153	1.22	0.57	1.12	0.81		
	Syt1/GFP	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=35; n2=34	U	1114.0	-1.33	0.18475	-0.160	0.22	0.06	0.27	0.07		
E	Manders' M1	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=45; n2=45	U	2069.5	0.17	0.86225	0.018	0.88	0.05	0.88	0.06		
	Manders' M2	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=45; n2=45	t (88)	-0.40	-0.40	0.69008	-0.084	0.85	0.13	0.86	0.14		
	Li's ICQ	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=45; n2=45	t (88)	0.64	0.64	0.52151	0.136	0.32	0.05	0.31	0.06		
Figure S2														
A	A _{fast}	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (45)	2.37	2.29	0.02224	0.691	9.89	6.21	5.89	5.34		
B	A _{slow}	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (45)	-0.89	-0.88	0.38047	-0.258	0.41	0.40	0.52	0.48		
C	Sync charge	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (45)	2.21	2.14	0.03242	0.644	102.59	76.23	60.49	52.89		
D	Async charge	KO+Syt1 ^{WT} vs KO+Syt1 ^{PL}	n1=23; n2=24	t (45)	-1.39	-1.36	0.17277	-0.404	22.05	17.21	31.13	26.53		
Figure S3														
A	A _{fast}	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (50)	1.45	1.42	0.15468	0.401	4.58	3.23	3.34	2.96		
B	A _{slow}	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (50)	-0.60	-0.60	0.54922	-0.167	0.18	0.18	0.21	0.19		
C	Sync charge	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (50)	1.23	1.21	0.22509	0.341	51.65	43.66	14.62	13.82		
D	Async charge	WT+Syt1 ^{WT} vs WT+Syt1 ^{PL}	n1=26; n2=26	t (40.07)	-1.33	-1.31	0.19185	-0.368	10.46	8.00	38.17	34.99		