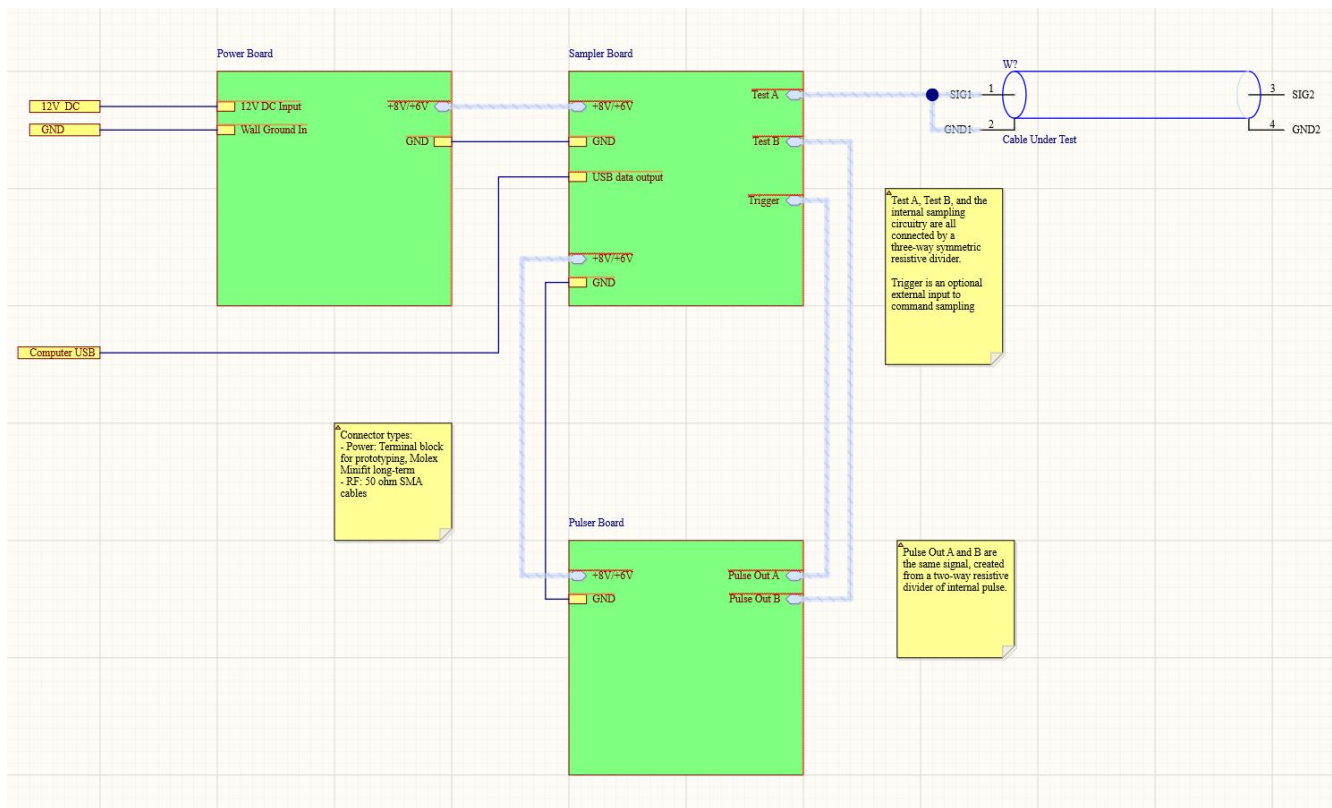


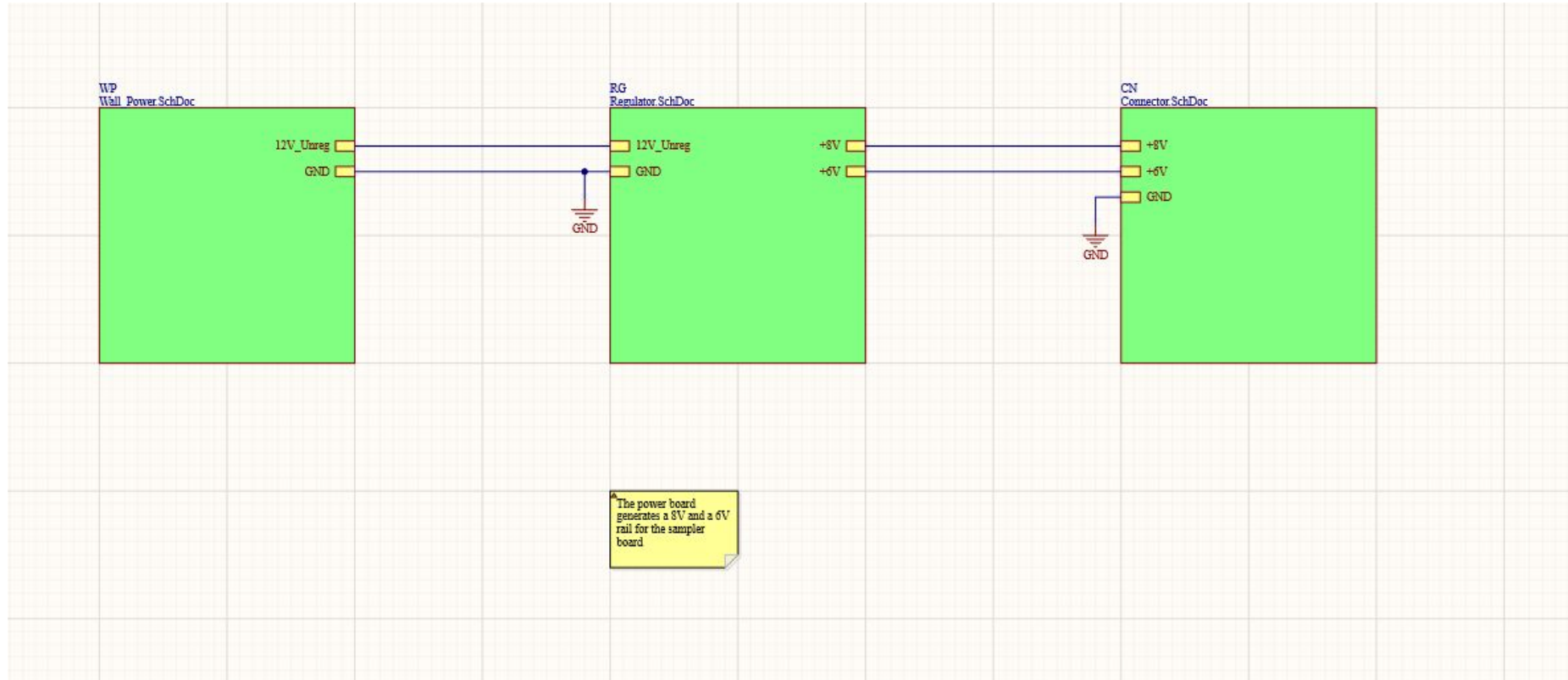
Time-Domain Reflectometer CDR

Will Werst and Junno Tseng

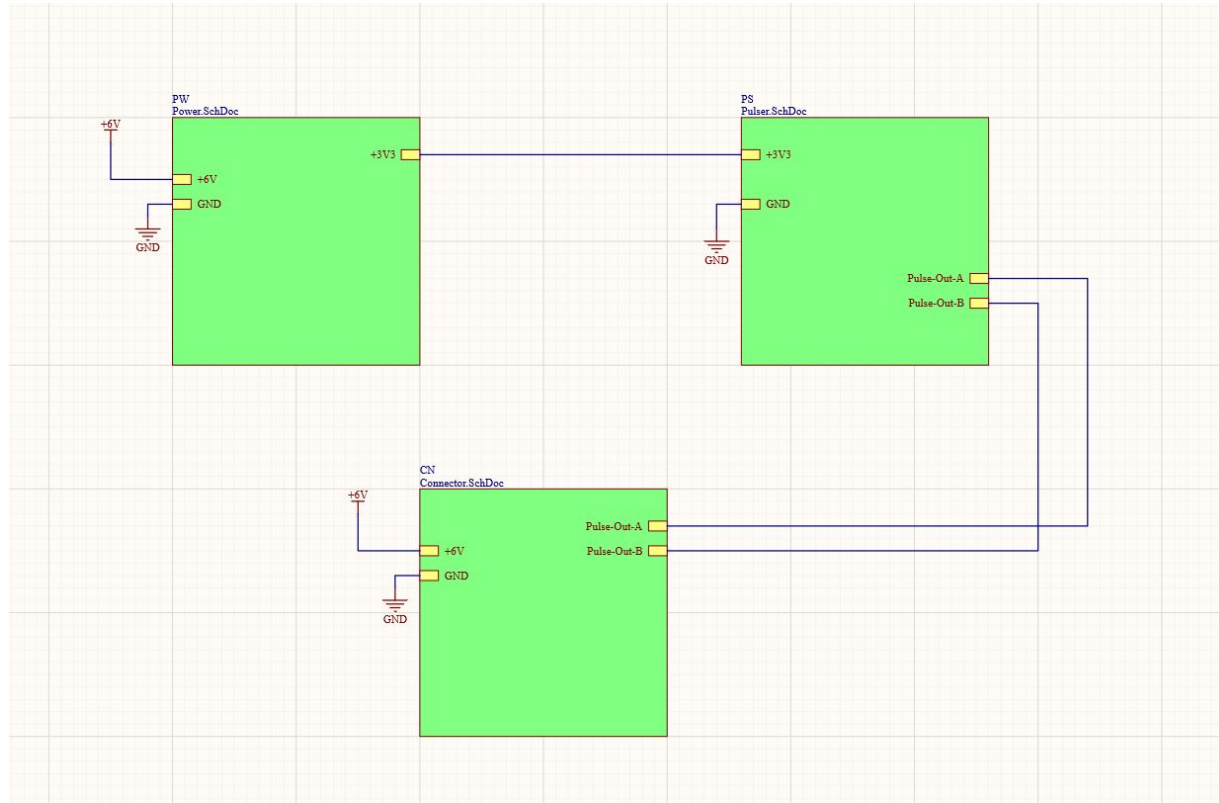
High-Level Block Diagram



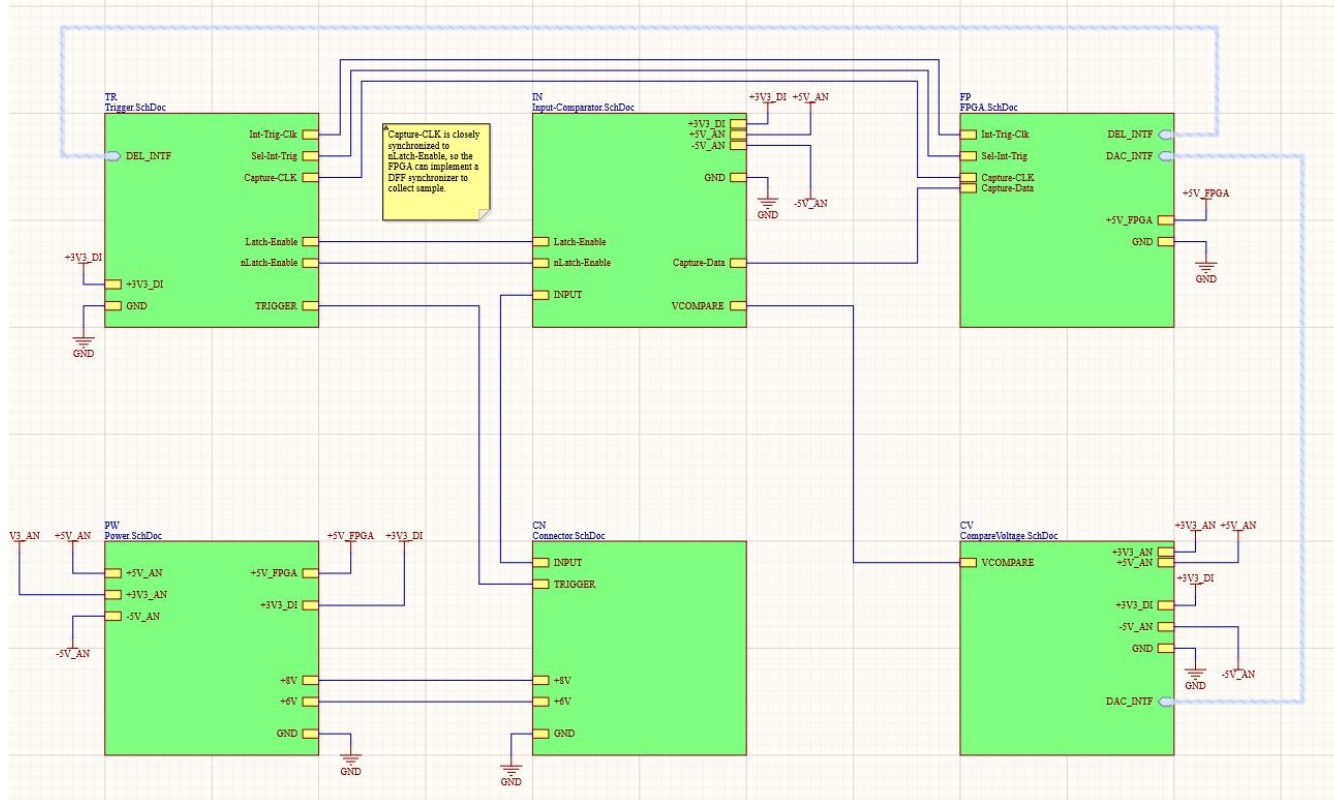
Power Board



Pulser Board



Sampler Board



Power Board BOM

Item Details				Primary Solution						
	Name	Designator	Quantity	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Subtotal 1	
1	C0805X105K3RACTU	C1, C2, C4, C5	4	KEMET	C0805X105K3RACTU	Digi-Key	399-11176-1-ND	0.86	3.44	i
2	EEEF1V101P	C3	1	Panasonic	EEEF1V101P	Digi-Key	PCE4023DKR-ND	0.74	0.74	i
3	1885200000	E1	1	Weidmuller	1885200000	Digi-Key	281-2066-ND	2.22	2.22	i
4	282836-2	J1	1	TE Connectivity	282836-2	Digi-Key	A98076-ND	0.71	0.71	i
5	RASM722PTR13X	J2	1	Switchcraft	RASM722PTR13X	Digi-Key	SC2028-1-ND	2.10	2.10	i
6	CRCW080513K0FKEA	R1	1	Vishay	CRCW080513K0FKEA	Digi-Key	541-13.0KCDKR-ND	0.10	0.10	i
7	CRCW08052K40FKEA	R2, R4	2	Vishay	CRCW08052K40FKEA	Digi-Key	541-2.40KCDKR-ND	0.10	0.20	i
8	CRCW08059K10FKEA	R3	1	Vishay	CRCW08059K10FKEA	Digi-Key	541-9.10KCDKR-ND	0.10	0.10	i
9	LM317D2T-TR	U1, U2	2	STMicroelectr...	LM317D2T-TR	Digi-Key	497-1571-6-ND	0.88	1.76	i

Pulse Board BOM

Item Details				Primary Solution						
	Name	Designator	Quantity	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Subtotal 1	
1	EEE-FK1V100UR	C1	1	Panasonic	EEEFK1V100UR	Digi-Key	PCE3834DKR-ND	0.30	0.30	i
2	C0805X105K3RACTU	C2, C3	2	KEMET	C0805X105K3RACTU	Digi-Key	399-11176-1-ND	0.86	1.72	i
3	C0805C103J3GACTU	C4	1	KEMET	C0805C103J3GACTU	Digi-Key	399-7990-6-ND	0.37	0.37	i
4	C0805C104K5RACTU	C5	1	KEMET	C0805C104K5RACTU	Digi-Key	399-1170-6-ND	0.15	0.15	i
5	1885200000	E1	1	Weidmuller	1885200000	Digi-Key	281-2066-ND	2.22	2.22	i
6	731000114	J1, J2	2	Molex	73100-0114	Digi-Key	WM5525-ND	5.16	10.32	i
7	CRCW080518K0FKEA	R1	1	Vishay	CRCW080518K0FKEA	Digi-Key	541-18.0KCDKR-ND	0.10	0.10	i
8	CRCW080511K0FKEA	R2	1	Vishay	CRCW080511K0FKEA	Digi-Key	541-11.0KCDKR-ND	0.10	0.10	i
9	1K 1% 0805(2012)	R3	1	Yageo	RC0805FR-071KL	Digi-Key	311-1.00KCRDKR-ND	0.10	0.10	i
10	CRCW060350R0FKEA	R4, R6	2	Vishay Dale	CRCW060350R0FKEA	Digi-Key	541-3318-1-ND	0.10	0.20	i
11	LM317D2T-TR	U1	1	STMicroelectr...	LM317D2T-TR	Digi-Key	497-1571-6-ND	0.88	0.88	i
12	SN74LVC14ADBR	U2	1	Texas Instrum...	SN74LVC14ADBR	Digi-Key	296-8463-1-ND	0.35	0.35	i

Sampler Board BOM

	Item Details			Primary Solution						
	Name	Designator	Quantity	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Subtotal 1	
1	4UCON 19008	AB1, BB1,...	4							⚠
2	C0805X105K3RACTU	C1, C2, C...	12	KEMET	C0805X105K3RACTU	Mouser	80-C0805X105K3RACTU	0.546	6.55	ⓘ
3	C1206C104J3GACTU	C3, C4, C5	3	KEMET	C1206C104J3GACTU	Mouser	80-C1206C104J3G	1.66	4.98	ⓘ
4	CC0603KRX7R9BB104	C6, C7	2	Yageo	CC0603KRX7R9BB104	Mouser	603-CC603KRX7R9BB1...	0.10	0.20	ⓘ
5	C0805C104K5RACTU	C16, C17,...	17	KEMET	C0805C104K5RACTU	Digi-Key	399-1170-6-ND	0.105	1.79	ⓘ
6	CGA5L1X7R1E106K1...	C29, C31	2	TDK	CGA5L1X7R1E106K160AC	Digi-Key	445-6990-6-ND	0.70	1.40	ⓘ
7	1885200000	E1	1	Weidmuller	1885200000	Digi-Key	281-2066-ND	2.22	2.22	ⓘ
8	731000114	J1, J2	2	Molex	73100-0114	Mouser	538-73100-0114	4.27	8.54	ⓘ
9	CRCW080530K0FKEA	R1, R12,...	3	Vishay	CRCW080530K0FKEA	Mouser	71-CRCW0805-30K-E3	0.10	0.30	ⓘ
10	CRCW080510K0FKEA	R2, R14,...	3	Vishay	CRCW080510K0FKEA	Mouser	71-CRCW0805-10K-E3	0.10	0.30	ⓘ
11	CRCW060320K0FKEA	R3, R9	2	Vishay	CRCW060320K0FKEA	Mouser	71-CRCW0603-20K-E3	0.10	0.20	ⓘ
12	CRCW060310K0FKEA	R4, R6	2	Vishay	CRCW060310K0FKEA	Mouser	71-CRCW0603-10K-E3	0.10	0.20	ⓘ
13	ERA6AEB202V	R5	1	Panasonic	ERA-6AEB202V	Digi-Key	P2.0KDADKR-ND	0.31	0.31	ⓘ
14	CRCW060350R0FKEA	R7, R8	2	Vishay Dale	CRCW060350R0FKEA	Mouser	71-CRCW0603-50-E3	0.10	0.20	ⓘ
15	CRCW080518K0FKEA	R10, R13	2	Vishay	CRCW080518K0FKEA	Mouser	71-CRCW080518K0FKEA	0.10	0.20	ⓘ
16	CRCW080511K0FKEA	R11, R15	2	Vishay	CRCW080511K0FKEA	Digi-Key	541-11.0KCDKR-ND	0.10	0.20	ⓘ
17	CRCW0805127RFKEA	R16, R17,...	7	Vishay	CRCW0805127RFKEA	Digi-Key	541-127CDKR-ND	0.057	0.57	ⓘ
18	CRCW080582R5FKEA	R20, R21,...	7	Vishay	CRCW080582R5FKEA	Digi-Key	541-82.5CDKR-ND	0.057	0.57	ⓘ
19	CRCW08052K20FKEA	R30, R31,...	3	Vishay	CRCW08052K20FKEA	Digi-Key	541-2.20KCDKR-ND	0.10	0.30	ⓘ
20	ADCMPS82BCPZ-R2	U1	1	Analog Devices	ADCMPS82BCPZ-R2	Mouser	584-ADCMPS82BCPZ-R2	20.25	20.25	ⓘ
21	LM317D2T-TR	U2, U7, U...	4	STMicroelectr...	LM317D2T-TR	Digi-Key	497-1571-6-ND	0.88	3.52	ⓘ
22	OPA189IDR	U3	1	Texas Instrum...	OPA189IDR	Digi-Key	296-48941-6-ND	2.49	2.49	ⓘ
23	AD9762ARUZ	U4	1	Analog Devices	AD9762ARUZ	Mouser	584-AD9762ARUZ	14.62	14.62	ⓘ
24	SN65EPT23DGKR	U5	1	Texas Instrum...	SN65EPT23DGKR	Digi-Key	296-27265-6-ND	3.50	3.50	ⓘ
25	SI53360-B-GT	U6	1	Silicon Labs	SI53360-B-GT	Mouser	634-SI53360-B-GT	1.38	1.38	ⓘ
26	SY89296U	U10	1	Microchip	SY89296UTG	Digi-Key	576-2557-ND	9.98	9.98	ⓘ
27	SN65EPT22D	U11	1	Texas Instrum...	SN65EPT22D	Digi-Key	296-24067-5-ND	4.20	4.20	ⓘ
28	LTC3261IMSE#PBF	U12	1	Analog Devic...	LTC3261IMSE#PBF	Mouser	584-LTC3261IMSE#PBF	8.22	8.22	ⓘ
29	LM337IMP/NOPB	U13	1	TI National Se...	LM337IMP/NOPB	Digi-Key	LM337IMP/NOPBDR-...	1.58	1.58	ⓘ

Move to Altium

See PDF of schematics as well

Appendix

Negative LDO Droop Sim

