External Cabling Update

Pelle

Need cable length; HV hw ready; LV mezz. needed

Need cable length; hw ready

DONE (-spare)

DONE

9 DB50 need rework

9 need rework

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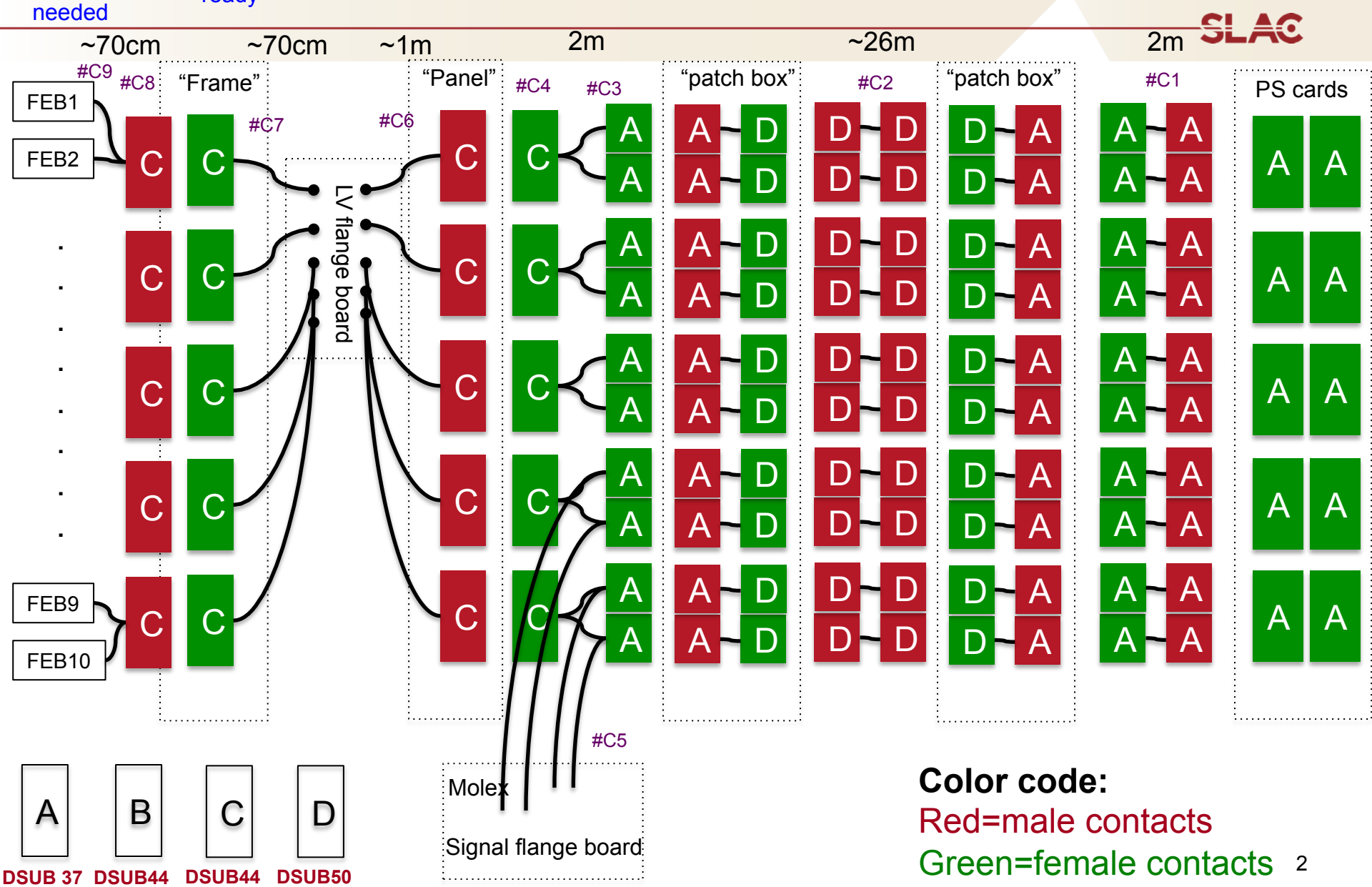
DONE

DONE



Color code:

Red=male contacts

Green=female contacts

Low Voltage Power

	AVDD+	AVDD-	DVDD	Flange
Voltage (V)	5.5	-5.5	5.5	5.0
Meas I (0 hybrids)	1.4	0.25	1.2	0.25
Meas I (1 hybrids)	2.0	0.27	1.2	0.25
Meas I (2 hybrids)	2.6	0.29	1.2	0.25
Meas I (3 hybrids)	3.0	0.31	1.2	0.25
Meas I (4 hybrids)	3.4	**0.33 (hit 8V limit)**	1.2	0.25

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Voltage drops

	AVDD+	AVDD-	DVDD	Flange
Voltage (V)	5.5	-5.5	5.5	5.0
Calc. I (A) - originally	4.3	0.26	0.7	0.5
Meas. I 3hyb (A)	3.0	0.31	1.2	0.25
Meas. SRC 3hyb (V)	7.361	7.922	7.503	5.912
Calc SRC (V)	7.37	8.09	7.41	5.70

Drops close to expected after adjusting for reality

- 22m long cable->26m
- Total flange pigtails 1m->5m
- AVDD- is 26AWG instead of 22AWG!!

Original design was too tight (and wrong)…

Modification needed

	AVDD+	AVDD-	DVDD	Flange
Voltage (V)	5.5	-5.5	5.5	5.0
Calc. I (A) - originally	4.3	0.26	0.7	0.5
Meas. I (4 hybrids)	3.4	**0.33**	1.2	0.25
Meas. SRC 4hyb (V)	7.644	**8.1**	7.486	5.912
Calc. SRC (V)	7.6	8.3	7.4	5.70
Mod1 Calc. SRC	7.3	6.39	6.92	5.70
Mod1 Calc. max I (A)	4.7	0.92	2.1	1.07

Mod1:

- Add single 20AWG to FEB power channels in long 26m cable between boxes; no other change
- Brings AVDD- safely below limit and adds safety factor on all channels

Low Voltage Power After Mod1

SLAC

	AVDD+ (A)	AVDD+ (Vsrc)	AVDD- (A)	AVDD- (Vsrc)	DVDD (A)	DVDD (Vsrc)	Flange (A)	Flange (Vsrc)
Meas I (0 hyb)	1.4	6.4	0.25	7.4	1.2	7.5	0.25	5.9
Meas I mod1 (0 hyb)	1.4	6.3	0.25	6.3	1.1	7.3	0.23	5.9
Meas I (1 hyb)	2.0	6.8	0.27	7.6	1.2	7.5	0.25	5.9
Meas I mod1 (1 hyb)	1.9	6.6	0.27	6.4	1.2	7.3	0.23	5.9
Meas I (2 hyb)	2.6	7.1	0.29	7.8	1.2	7.5	0.25	5.9
Meas I mod1 (2 hyb)	2.4	6.8	0.29	6.4	1.2	7.3	0.23	5.9
Meas I (3 hyb)	3.0	7.4	0.31	7.9	1.2	7.5	0.25	5.9
Meas I mod1 (3 hyb)	2.9	7.1	0.31	6.5	1.2	7.3	0.23	5.9
Meas I (4 hyb)	3.4	7.6	**0.33 (hit 8V limit)**	**8.0**	1.2	7.5	0.25	5.9
Meas I mod1 (4 hyb)	3.3	7.3	0.33	6.6	1.2	7.3	0.23	5.9