



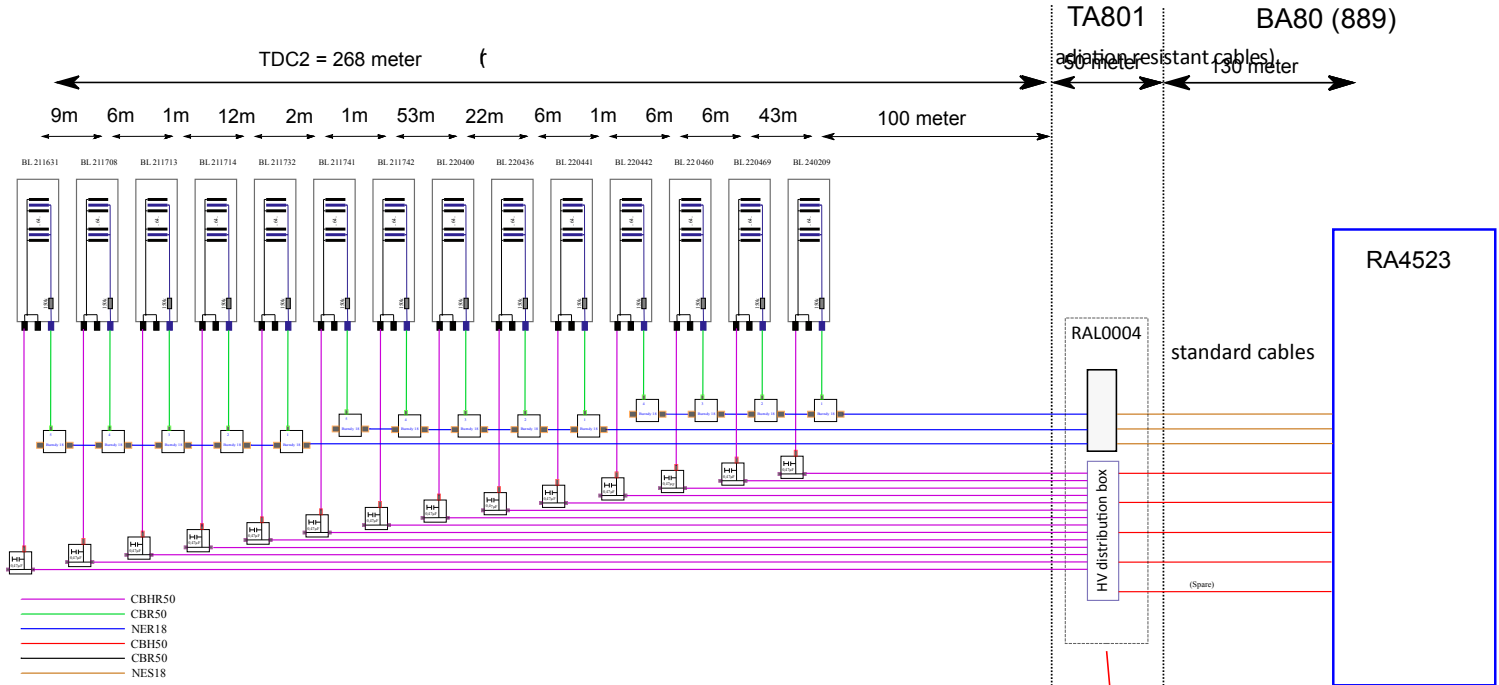
Technical Board - Radiation tolerant Cabling

Ewald Effinger for SY-BI-BL

20.06.2024

Cabling in TDC2

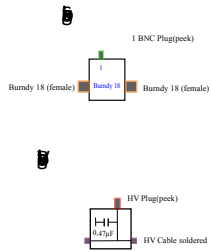
TDC2 SPS Beam Loss layout



the connection box

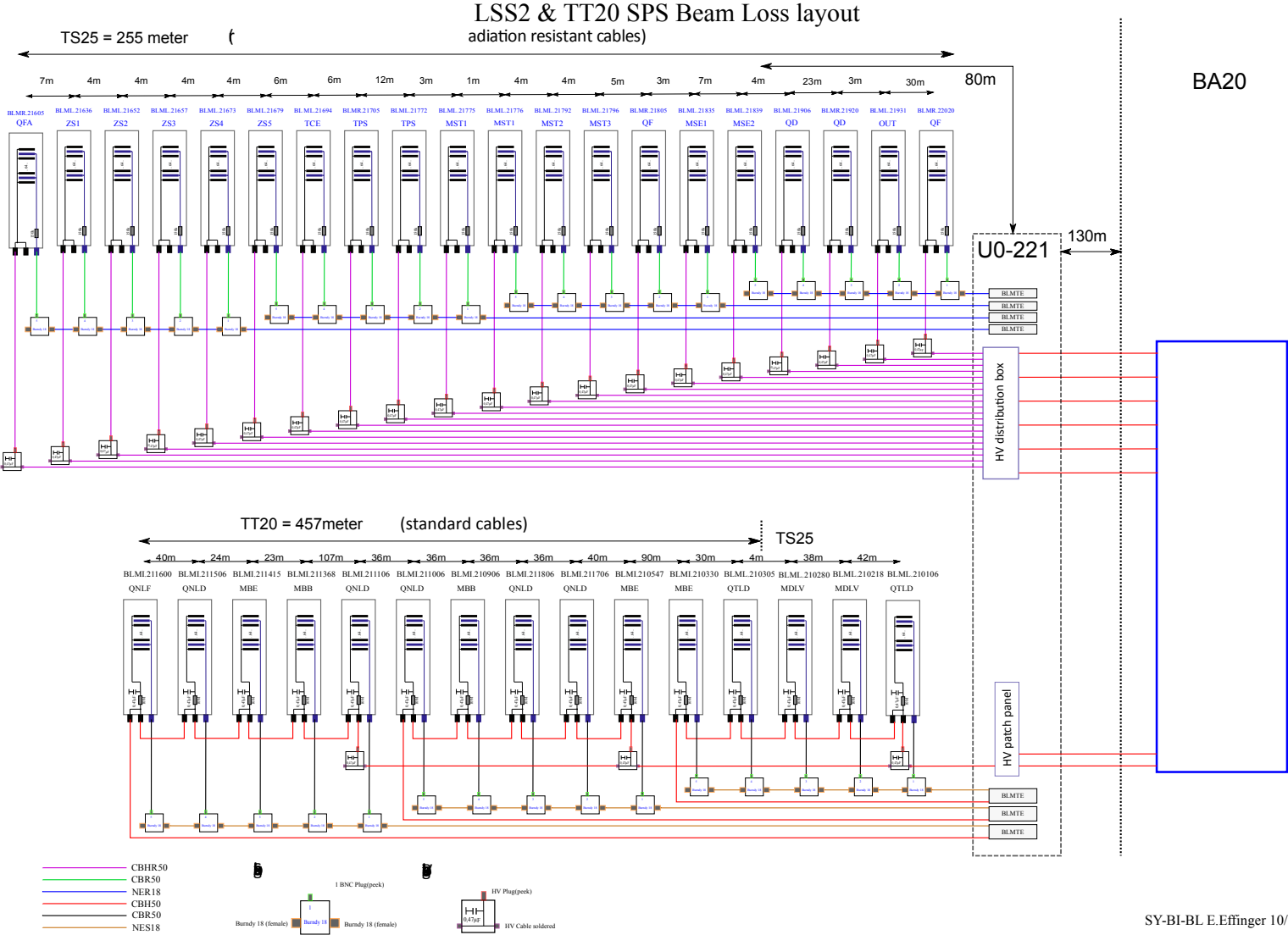


to the	RAL [m]	240209 [m]	220469 [m]
RX211631	268	168	125
RX211708	259	159	116
RX211713	253	153	110
RX211714	252	152	109
RX211732	240	140	97
RX211741	238	138	95
RX211742	237	137	94
RX220400	184	84	41
RX220436	162	62	19
RX220441	156	56	13
RX220442	155	55	12
RX220460	149	49	6
RX220469	143	43	0
RX240209	100	0	0
Sum	2796	1396	837



SY-BI-BL E.Effinger 10/04/24

Cabling in LSS2 and TT20



BL needs for radiation tolerant cables in LS3

Cables for the LSS2 installation

NER18 for TS25 (V3)			CBHR50 for TS25 (V3)			CBHR50 for TS25 (V3)		
to the	MSE21872 [m]	TA U0-221 [m]	to the	MSE21872 [m]	TA U0-221 [m]	to the	CBHR50 [m]	CBR50 [m]
RX21604	7	7	RX21604	78	158	RX21604	10	10
RX21636	4	4	RX21636	71	151	RX21636	10	10
RX21652	4	4	RX21652	67	147	RX21652	10	10
RX21657	4	4	RX21657	63	143	RX21657	10	10
RX21673	83	163	RX21673	59	139	RX21673	10	10
RX21679	6	4	RX21679	45	125	RX21679	10	10
RX21694	6	4	RX21694	39	119	RX21694	10	10
RX21705	12	12	RX21705	27	107	RX21705	10	10
RX21772	3	3	RX21772	24	104	RX21772	10	10
RX21775	122	202	RX21775	23	103	RX21775	10	10
RX21776	4	4	RX21776	19	99	RX21776	10	10
RX21792	5	5	RX21792	15	95	RX21792	10	10
RX21796	3	3	RX21796	10	90	RX21796	10	10
RX21805	7	7	RX21805	7	87	RX21805	10	10
RX21835	3	83	RX21835	1	81	RX21835	10	10
RX21839	4	4	RX21839	1	81	RX21839	10	10
RX21906	23	23	RX21906	5	85	RX21906	10	10
RX21920	3	3	RX21920	28	108	RX21920	10	10
RX21931	30	30	RX21931	31	111	RX21931	10	10
RX22020	80	160	RX22020	61	141	RX22020	10	10
Spare	100	200	Spare	100	500	Spare	100	100
Sum	513	929	Sum	774	2774	Sum	300	300

Cables for the TDC2 installation

NER18 for TDC2		CBHR for TDC2				CBHR and CBR for TDC2		
to the	RAL [m]	to the	RAL [m]	240209 [m]	220469 [m]	to the	CBHR50 [m]	CBR50 [m]
RX211631	9	RX211631	268	168	125	RX211631	10	10
RX211708	6	RX211708	259	159	116	RX211708	10	10
RX211713	1	RX211713	253	153	110	RX211713	10	10
RX211714	252	RX211714	252	152	109	RX211714	10	10
RX211732	2	RX211732	240	140	97	RX211732	10	10
RX211741	1	RX211741	238	138	95	RX211741	10	10
RX211742	53	RX211742	237	137	94	RX211742	10	10
RX220400	22	RX220400	184	84	41	RX220400	10	10
RX220436	162	RX220436	162	62	19	RX220436	10	10
RX220441	1	RX220441	156	56	13	RX220441	10	10
RX220442	6	RX220442	155	55	12	RX220442	10	10
RX220460	6	RX220460	149	49	6	RX220460	10	10
RX220469	43	RX220469	143	43	0	RX220469	10	10
RX240209	100	RX240209	100	0	0	RX240209	10	10
Spare	200	Spare	500	400	300	Spare	100	100
Sum	864	Sum	3296	1796	1137	Sum	240	240

BL needs for radiation tolerant cables in LS3

Cables for the TDC2 installation (oBLM)

Cables for the TCC2 installation

to the	RAL [m]	No of cables	CKR50	CBHR50	CBR50	NER18	NER8
RX211411	360	2	720	720	720	360	0
RX213116	120	2	240	240	240	120	0
to the	RX220000						
RX211411	130	1	130	130	130	0	130
RX213116	110	1	110	110	110	0	110
Spare			400	400	400	400	200
Sum			1200	1200	1200	480	240

Total request for the BL section

	NER18	CBHR50	CBR50	CKR50	NER8
TDC2	864	3536	240	0	0
TS25	929	3074	300	0	0
TCC2	300	1500	240	0	0
TDC2 oBLM	480	1200	1200	1200	240
Sum	2573	9310	1980	1200	240
includes					
Spare	800	1600	600	400	200

A total of almost 15km radiation tolerant cable is needed.

5 different cable types are needed.

For the installation we also need connectors and plugs with PEEK isolation.



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