

ID	Task Name	Start	Finish	Predecessors	Duration	Work	% Complete	Qtr 4, 2008			Qtr 1, 2009			Qtr 2, 2009			Qtr 3, 2009			Qtr 4, 2009		
								Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
65	Analog to Digital Converter Testing and Cal.	Mon 8/23/10	Thu 8/26/10	64	4 days	16 hrs	0%															
66	Digital to Analog Converter Testing and Cal.	Fri 8/27/10	Wed 9/1/10	65	4 days	16 hrs	0%															
67	Flash Memory Access Testing	Fri 6/18/10	Wed 6/23/10	42	4 days	16 hrs	100%															
68	Second Prototype Testing and Evaluation	Mon 9/13/10	Fri 10/8/10		19.55 days	84 hrs	0%															
69	Power Supply and Distribution Testing	Mon 9/13/10	Mon 9/13/10	59	1 day	4 hrs	0%															
70	DDS Setup and Synchronization Testing	Tue 9/14/10	Wed 9/22/10	69	6.06 days	16 hrs	0%															
71	DDS RF Output Adjustment and Testing	Wed 9/22/10	Tue 9/28/10	70	4.82 days	32 hrs	0%															
72	Analog IO Gain and Offset Calibration	Tue 9/28/10	Thu 9/30/10	71	1.67 days	8 hrs	0%															
73	Analog to Digital Converter Testing and Cal.	Thu 9/30/10	Mon 10/4/10	72	2 days	8 hrs	0%															
74	Digital to Analog Converter Testing and Cal.	Mon 10/4/10	Wed 10/6/10	73	2 days	8 hrs	0%															
75	Flash Memory Access Testing	Wed 10/6/10	Fri 10/8/10	74	2 days	8 hrs	0%															
76	Third Prototype Testing and Evaluation	Fri 10/8/10	Fri 11/5/10		19.55 days	84 hrs	0%															
77	Power Supply and Distribution Testing	Fri 10/8/10	Mon 10/11/10	75	1 day	4 hrs	0%															
78	DDS Setup and Synchronization Testing	Mon 10/11/10	Tue 10/19/10	77	6.06 days	16 hrs	0%															
79	DDS RF Output Adjustment and Testing	Tue 10/19/10	Tue 10/26/10	78	4.82 days	32 hrs	0%															
80	Analog IO Gain and Offset Calibration	Tue 10/26/10	Thu 10/28/10	79	1.67 days	8 hrs	0%															
81	Analog to Digital Converter Testing and Cal.	Thu 10/28/10	Mon 11/1/10	80	2 days	8 hrs	0%															
82	Digital to Analog Converter Testing and Cal.	Mon 11/1/10	Wed 11/3/10	81	2 days	8 hrs	0%															
83	Flash Memory Access Testing	Wed 11/3/10	Fri 11/5/10	82	2 days	8 hrs	0%															
84	Faceplates and Crate Procurement	Fri 11/5/10	Fri 11/12/10		5 days	20 hrs	0%															
85	Faceplate Layout	Fri 11/5/10	Mon 11/8/10	83	1 day	4 hrs	0%															
86	First Piece Faceplate Fabrication Requested	Mon 11/8/10	Tue 11/9/10	85	1 day	4 hrs	0%															
87	First Piece Faceplate Delivered	Tue 11/9/10	Wed 11/10/10	86	1 day	4 hrs	0%															
88	Final Faceplate Fabrication Requested	Wed 11/10/10	Thu 11/11/10	87	1 day	4 hrs	0%															
89	Final Faceplates Delivered	Thu 11/11/10	Fri 11/12/10	88	1 day	4 hrs	0%															
90	PD_VME_Rear01: Triple Phase Detector, Rear VME Module	Mon 10/19/09	Thu 4/8/10	24	123 days	272 hrs	95%															
91	PD_VME Prototype Hardware Development	Mon 10/19/09	Mon 2/22/10		90.5 days	236 hrs	100%															
92	Prototype Design Begins	Mon 10/19/09	Mon 10/19/09		0 days	0 hrs	100%															
93	Initial Design and Layout	Mon 10/19/09	Mon 10/26/09	92	5 days	16 hrs	100%															
94	PCB Parts and Symbol Development	Mon 10/19/09	Mon 10/26/09	92	5 days	8 hrs	100%															
95	Schematic Capture and Board Layout	Mon 10/26/09	Wed 11/11/09	94	12 days	40 hrs	100%															
96	PCB Layout Specification	Mon 11/2/09	Mon 11/16/09	95SS+5 days	10 days	16 hrs	100%															
97	PCB Layout Begins	Mon 11/16/09	Mon 11/16/09	96	0 days	0 hrs	100%															
98	PCB Layout	Mon 11/16/09	Mon 12/14/09	97	20 days	80 hrs	100%															
99	Build BOM and Assembly Parts Database	Mon 11/16/09	Mon 11/23/09	97	5 days	16 hrs	100%															
100	Protoype Component Orders Compiled	Mon 11/23/09	Wed 11/25/09	99	2 days	8 hrs	100%															
101	Protoype Components Ordered	Wed 11/25/09	Thu 11/26/09	100	1.25 days	4 hrs	100%															
102	Prototype Components Delivered	Thu 11/26/09	Fri 11/27/09	101	1 day	4 hrs	100%															
103	Review PCB Layout	Mon 12/14/09	Thu 12/17/09	98	3 days	8 hrs	100%															
104	PCB Design Complete	Thu 12/17/09	Thu 12/17/09	103	0 days	0 hrs	100%															
105	PCB Boards Ordered	Mon 12/21/09	Tue 12/22/09	104	1.25 days	4 hrs	100%															
106	PCB Boards Received	Tue 1/5/10	Tue 1/5/10	105	1 day	4 hrs	100%															
107	Submission for In-House Final Assembly, 3 Modules	Wed 1/6/10	Wed 1/6/10	106	0.5 days	4 hrs	100%															
108	First Prototype Assembly Complete	Fri 1/8/10	Fri 1/8/10	107	1 day	8 hrs	100%															
109	Second Prototype Assembly Complete	Fri 2/19/10	Fri 2/19/10	107	1 day	8 hrs	100%															
110	Third Prototype Assembly Complete	Mon 2/22/10	Mon 2/22/10	109	1 day	8 hrs	100%															
111	First Prototype Testing and Evaluation	Thu 4/1/10	Fri 4/2/10	108	1.5 days	12 hrs	100%															
112	Power Supply and Distribution Testing	Thu 4/1/10	Thu 4/1/10	108	0.5 days	4 hrs	100%															
113	AD8307 RSSI Calibration and Testing	Thu 4/1/10	Thu 4/1/10	112	0.5 days	4 hrs	100%															
114	AD8302 Phase Detector Calibration and Testing	Fri 4/2/10	Fri 4/2/10	113	0.5 days	4 hrs	100%															
115	Second Prototype Testing and Evaluation	Fri 4/2/10	Tue 4/6/10	109	2 days	12 hrs	0%															
116	Power Supply and Distribution Testing	Fri 4/2/10	Fri 4/2/10	114	0.5 days	4 hrs	0%															
117	AD8307 RSSI Calibration and Testing	Mon 4/5/10	Mon 4/5/10	116	0.5 days	4 hrs	0%															
118	AD8302 Phase Detector Calibration and Testing	Mon 4/5/10	Tue 4/6/10	117	1 day	4 hrs	0%															
119	Third Prototype Testing and Evaluation	Tue 4/6/10	Thu 4/8/10	110	2 days	12 hrs	0%															
120	Power Supply and Distribution Testing	Tue 4/6/10	Tue 4/6/10	118	0.5 days	4 hrs	0%															
121	AD8307 RSSI Calibration and Testing	Wed 4/7/10	Wed 4/7/10	120	0.5 days	4 hrs	0%															
122	AD8302 Phase Detector Calibration and Testing	Wed 4/7/10	Thu 4/8/10	121	1 day	4 hrs	0%															
123	RF_Switch_01: RF Switch Module for LLRF Module Online Testing	Wed 6/17/09	Tue 12/7/10		384.75 days	356 hrs	12%															
124	RF Switch Component Evaluation	Wed 6/17/09	Wed 7/1/09		11 days	88 hrs	100%															
125	Evaluation Component Procurement	Wed 6/17/09	Tue 6/30/09		10 days	80 hrs	100%															
126	LMH6572 Triple Video Switch Evaluation	Wed 7/1/09	Wed 7/1/09	125	1 day	8 hrs	100%															
127	RF_Switch_01 Prototype Hardware Development	Wed 9/1/10	Wed 11/10/10		50.25 days	240 hrs	0%															
128	Initial Design and Layout	Wed 9/1/10	Tue 9/7/10		5 days	16 hrs	0%															

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Engineer1[40%]

Designer1[20%]

Engineer

Engine

11/16

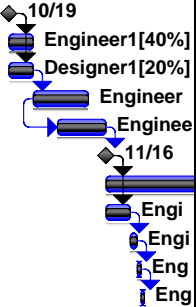
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								Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
129	Schematic Capture and Board Layout	Wed 9/8/10	Thu 9/9/10	128	2 days	8 hrs	0%															
130	Initial Component Procurement	Wed 9/8/10	Thu 9/9/10	128	1.25 days	4 hrs	0%															
131	PCB Layout Specification	Fri 9/10/10	Thu 9/23/10	129	10 days	40 hrs	0%															
132	PCB Parts and Symbol Development	Fri 9/24/10	Mon 9/27/10	131	2 days	16 hrs	0%															
133	Ready to Begin PCB Layout	Mon 9/27/10	Mon 9/27/10	132	0 days	0 hrs	0%															
134	PCB Layout	Tue 9/28/10	Mon 10/25/10	133	20 days	80 hrs	0%															
135	Build BOM and Assembly Parts Database	Tue 9/28/10	Mon 10/4/10	133	5 days	16 hrs	0%															
136	Prototype Component Orders Compiled	Tue 10/5/10	Wed 10/6/10	135	2 days	8 hrs	0%															
137	Prototype Components Ordered	Thu 10/7/10	Fri 10/8/10	136	1.25 days	4 hrs	0%															
138	Prototype Components Received	Fri 10/8/10	Mon 10/11/10	137	1 day	4 hrs	0%															
139	Review PCB Layout	Tue 10/26/10	Thu 10/28/10	134	2.5 days	8 hrs	0%															
140	PCB Design Complete	Thu 10/28/10	Thu 10/28/10	139	0 days	0 hrs	0%															
141	PCB Boards Ordered	Thu 10/28/10	Fri 10/29/10	140	1.25 days	4 hrs	0%															
142	PCB Boards Received	Fri 10/29/10	Mon 11/1/10	141	1 day	4 hrs	0%															
143	Submission for In-House Final Assembly, 3 Modules	Mon 11/1/10	Tue 11/2/10	142	0.5 days	4 hrs	0%															
144	First Prototye Assembly Complete	Tue 11/2/10	Thu 11/4/10	143	2 days	8 hrs	0%															
145	Second Prototype Assembly Complete	Thu 11/4/10	Mon 11/8/10	144	2 days	8 hrs	0%															
146	Third Prototype Assembly Complete	Mon 11/8/10	Wed 11/10/10	145	2 days	8 hrs	0%															
147	First Prototype Testing and Evaluation	Thu 11/4/10	Tue 12/7/10		23.5 days	28 hrs	0%															
148	Power Supply and Distribution Testing	Thu 11/4/10	Thu 11/4/10	144	0.5 days	4 hrs	0%															
149	RF Switch Propagation Delay Measurement	Thu 11/4/10	Fri 11/5/10	148	1 day	8 hrs	0%															
150	RF Switch Testing Short Term	Fri 11/5/10	Tue 11/9/10	149	2 days	8 hrs	0%															
151	RF Switch Testing Long Term	Tue 11/9/10	Tue 12/7/10	150	20 days	8 hrs	0%															
152	LLRF Module Development and Testing User Interface	Mon 3/22/10	Tue 10/26/10		156.24 days	608 hrs	7%															
153	USB Serial and VME Processor Interface Development	Mon 3/22/10	Tue 10/26/10		156.24 days	608 hrs	7%															
154	Establish Software Development Test Bench	Mon 3/22/10	Fri 4/2/10		10 days	40 hrs	60%															
155	Setup/Network PC for USB Interface	Mon 3/22/10	Mon 3/22/10		1 day	4 hrs	100%															
156	Install PD_VME Module and BLLRF Processor Node	Tue 3/23/10	Wed 3/24/10	155	2 days	8 hrs	100%															
157	Install USB-FIFO Drivers for program Development	Thu 3/25/10	Thu 3/25/10	156	1 day	4 hrs	100%															
158	Install and Configure Programming IDE	Fri 3/26/10	Mon 3/29/10	157	2 days	8 hrs	100%															
159	Establish Programming Environment for BLLRF Node	Tue 3/30/10	Fri 4/2/10	158	4 days	16 hrs	0%															
160	Develop Front VME Module for Testing Interfaces	Tue 3/23/10	Wed 4/21/10		21.24 days	32 hrs	28%															
161	Modify Older VME Module to Interface with	Tue 3/23/10	Wed 3/24/10	155	2 days	8 hrs	100%															
162	Design, Write and Test FPGA Logic for USB Interface	Thu 3/25/10	Tue 3/30/10	161	4 days	8 hrs	20%															
163	Adapt and Test FPGA Logic for VME Interface	Thu 4/15/10	Wed 4/21/10	41,162	4 days	16 hrs	0%															
164	Test Interface Software Development	Wed 4/21/10	Tue 10/26/10		134 days	536 hrs	1%															
165	LLRF Module Test Application Specification	Wed 4/21/10	Thu 5/13/10		16 days	64 hrs	13%															
166	Specification of Memory Maps and Data Access	Wed 4/21/10	Tue 4/27/10	163	4 days	16 hrs	0%															
167	Specification of Module Function Tests	Tue 4/27/10	Mon 5/3/10	166	4 days	16 hrs	0%															
168	Specification of User Interface	Mon 5/3/10	Fri 5/7/10	167	4 days	16 hrs	50%															
169	Specification of Data File Management	Fri 5/7/10	Thu 5/13/10	168	4 days	16 hrs	0%															
170	LLRF Module Field Monitor Application Specification	Thu 5/13/10	Tue 5/25/10		8 days	32 hrs	0%															
171	Specification of Functions	Thu 5/13/10	Wed 5/19/10	169	4 days	16 hrs	0%															
172	Write User Documentation	Wed 5/19/10	Tue 5/25/10	171	4 days	16 hrs	0%															
173	Software Written and Tested	Tue 5/25/10	Tue 10/26/10		110 days	440 hrs	0%															
174	Write Software, version 1	Tue 5/25/10	Tue 7/20/10	172	40 days	160 hrs	0%															
175	Test Software, version 1	Tue 7/20/10	Tue 8/3/10	174	10 days	40 hrs	0%															
176	Write Software, version 2	Tue 8/3/10	Tue 8/31/10	175	20 days	80 hrs	0%															
177	Test Software, version 2	Tue 8/31/10	Tue 9/14/10	176	10 days	40 hrs	0%															
178	Write Software, version 3	Tue 9/14/10	Tue 10/12/10	177	20 days	80 hrs	0%															
179	Test Software, version 3	Tue 10/12/10	Tue 10/26/10	178	10 days	40 hrs	0%															
180	LLRF On-Line System Testing	Fri 10/1/10	Fri 3/30/12		391 days	1,240 hrs	0%															
181	Test System Hardware Development	Fri 10/1/10	Thu 2/10/11		95 days	424 hrs	0%															
182	Development of System Integration Hardware	Fri 10/1/10	Thu 11/25/10		40 days	240 hrs	0%															
183	Installation of System Integration Hardware	Fri 11/26/10	Thu 12/23/10	182	20 days	80 hrs	0%															
184	Testing of System Integration Hardware	Fri 12/24/10	Thu 1/6/11	183	10 days	40 hrs	0%															
185	Installation of New VME Crate	Fri 1/7/11	Thu 1/13/11	184	5 days	24 hrs	0%															
186	Off-Line Testing of New Modules	Fri 1/14/11	Thu 2/10/11	185	20 days	40 hrs	0%															
187	Single Booster Cycle Testing	Fri 2/11/11	Fri 8/19/11		136 days	496 hrs	0%															
188	New Phase Detector Only Testing	Fri 2/11/11	Tue 2/15/11	186	2.67 days	16 hrs	0%															
189	New Frequency Source Only Testing	Tue 2/15/11	Tue 3/15/11	188	20 days	80 hrs	0%															
190	New Main Injector Phase Lock Testing	Tue 3/15/11	Tue 5/10/11	189	40 days	160 hrs	0%															
191	New Frequency Source and New Phase Control Testing	Tue 5/10/11	Fri 6/24/11	190	33.33 days	160 hrs	0%															
192	Full Freq., Phase, and MI Phase Lock Testing	Mon 6/27/11	Fri 8/19/11	191	40 days	80 hrs	0%															

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								Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
193	Long Term Testing by AD Operations	Mon 8/22/11	Fri 3/30/12		160 days	320 hrs	0%															
194	Phase I Testing	Mon 8/22/11	Fri 12/9/11	192	80 days	160 hrs	0%															
195	Phase II Testing	Mon 12/12/11	Fri 3/30/12	194	80 days	160 hrs	0%															

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