MIU	DCC - IN	DESCRIPTION	DCC - OUT	POLARITY
COMMON	J1-A	COMMON		
5V	J1-B			
	J1-C			
MW0-0	J1-D	CW0-0 Monitor	J5-A	
MW0-1	J1-E	CW0-1 Monitor	J5-B	
MW0-2	J1-F	CW0-2 Monitor	J5-C	
MW0-3	J1-G	CW0-3 Monitor	J5-D	
MW0-4	J1-H	CW0-4 Monitor	J5-E	
MW0-5	J1-J	CW0-5 Monitor	J5-F	
MW0-6	J1-K	CW0-6 Monitor	J5-G	
MW0-7	J1-L	CW0-7 Monitor	J5-H	
MW0-8	J1-M	CW0-8 Monitor	J5-J	
MW0-9	J1-N	CW0-9 Monitor	J5-K	
MW0-10	J1-P	CW0-10 Monitor	J5-L	
MW0-11	J1-R	CW0-11 Monitor	J5-M	
MW0-12	J1-S	CW0-12 Monitor	J5-N	
MW0-13	J1-T	CW0-13 Monitor	J5-P	
MW0-14	J1-U	CW0-14 Monitor	J5-R	
MW0-15	J1-V	CW0-15 Monitor	J5-S	

MW1-0	J1-W	CW1-0 Monitor	J5-T	
MW1-1	J1-X	CW1-1 Monitor	J5-U	
MW1-2	J1-Y	CW1-2 Monitor	J5-V	
MW1-3	J1-Z	CW1-3 Monitor	J5-W	
MW1-4	J1-a	CW1-4 Monitor	J5-X	
MW1-5	J1-b	CW1-5 Monitor	J5-Y	
MW1-6	J1-c	CW1-6 Monitor	J5-Z	
MW1-7	J1-d	CW1-7 Monitor	J5-a	
MW1-8	J1-e	CW1-8 Monitor	J5-b	
MW1-9	J1-f	CW1-9 Monitor	J5-c	
MW1-10	J1-g	CW1-10 Monitor	J5-d	
MW1-11	J1-h	CW1-11 Monitor	J5-e	
MW1-12	J1-i	CW1-12 Monitor	J5-f	
MW1-13	J1-j	CW1-13 Monitor	J5-g	
MW1-14	J1-k	CW1-14 Monitor	J5-h	
MW1-15	J1-m	CW1-15 Monitor	J5-j	

MIU	DCC - IN	DESCRIPTION	DCC - OUT	POLARITY
COMMON	J2-A	COMMON	J6-A	
5V	J2-B			
	J2-C			
MW2-0	J2-D	FBS: Contactor Closed	J6-d	1 = ON
MW2-1	J2-E	FBS: AC Over Current	J6-U	
MW2-2	J2-F	FBS: Local/Remote Status	J6-V	
MW2-3	J2-G	FBS: DC Control Power ON	J6-c	
MW2-4	J2-H	FBS: Choke Over Temperature	J6-e	
MW2-5	J2-J	FBS: Ground Fault	J6-B	
MW2-6	J2-K	FBS: Shunt Regulator Over Temp	J6-C	
MW2-7	J2-L	FBS: Rectifier Xformer Over Temp	J6-D	
MW2-8	J2-M	FBS: SCR Delta or Wye Over Temp	J6-E	
MW2-9	J2-N	FBS: SSC SCR Over Temp	J6-F	
MW2-10	J2-P	FBS: Door Open	J6-G	
MW2-11	J2-R	FBS: LCW Off	J6-H	
MW2-12	J2-S	FBS: (Ling:Fuse Fault) (MKI&II:AC Cont Pwr Over-I)	J6-J	
MW2-13	J2-T	FBS: DC Over Current	J6-K	
MW2-14	J2-U	FBS: Shunt Regulator Over Current	J6-S	
MW2-15	J2-V	FBS: Tuner LCW Off	J6-L	

MW3-0	J2-W	FBS: Offset PS AC Over Current	J6-M	
MW3-1	J2-X	FBS: Supply Type ID Bit 0 (1=Ling or MKI, 0=MKII)	J6-R	
MW3-2	J2-Y	FBS: Supply Type ID Bit 1(1=Ling or MKII, 0=MKI)	J6-T	
MW3-3	J2-Z	FBS: Driver or OPS Over Temperature	J6-X	
MW3-4	J2-a	FBS: Driver PS AC Over Current	J6-g	
MW3-5	J2-b	FBS: 480V 3 Phase Absent	J6-h	
MW3-6	J2-c	750CU: Repeated Spark Inhibit	J9-D	1 = Inhibited
MW3-7	J2-d	750CU: Spark Count Overflow	J9-E	1 = Overflow
MW3-8	J2-e	750CU: Spark Count Bit 7 (128)	J9-F	
MW3-9	J2-f	750CU: Spark Count Bit 6 (64)	J9-G	
MW3-10	J2-g	750CU: Spark Count Bit 5 (32)	J9-H	
MW3-11	J2-h	750CU: Spark Count Bit 4 (16)	J9-J	
MW3-12	J2-i	750CU: Spark Count Bit 3 (8)	J9-K	
MW3-13	J2-j	750CU: Spark Count Bit 2 (4)	J9-L	
MW3-14	J2-k	750CU: Spark Count Bit 1 (2)	J9-M	
MW3-15	J2-m	750CU: Spark Count Bit 0 (1)	J9-N	

MIU	DCC - IN	DESCRIPTION	DCC - OUT	POLARITY
COMMON	J3-A	COMMON	J7-A	
5V	J3-B		J7-F	
	J3-C			
MW4-0	J3-D	Mod: External Interlock OK	J7-C	
MW4-1	J3-E	Mod: Modulator Air Flow OK	J7-D	
MW4-2	J3-F	Mod: Modulator Water Flow OK	J7-E	
MW4-3	J3-G	Mod: Timer Delay Active	J7-H	
MW4-4	J3-H	Mod: Cabinet Doors Closed	J7-J	
MW4-5	J3-J	Mod: Deck Power OK	J7-K	
MW4-6	J3-K	Mod: Crowbar Up	J7-e	
MW4-7	J3-L	Mod: Modulator Water Temp OK	J7-N	
MW4-8	J3-M	Mod: PA Water Temp OK	J7-T	
MW4-9	J3-N	Mod: Series Tube Bias & Screen OK	J7-L	
MW4-10	J3-P	Mod: Anode Current OK	J7-M	
MW4-11	J3-R	Mod: Group A Power Supplies OK	J7-U	
MW4-12	J3-S	Mod: Group B Power Supplies OK	J7-V	
MW4-13	J3-T	Mod: Group A&B PS Not Over-Voltage	J7-W	
MW4-14	J3-U	Mod: CB 3,4,6,7, & Prg Bias PS S3 OK	J7-a	
MW4-15	J3-V	Mod: Distributed Amp Bias PS S5a OK	J7-b	

MW5-0	J3-W	Mod: Distributed Amp Screen PS S1a OK	J7-Y	
MW5-1	J3-X	Mod: S1,S2,S3,S5,S6,S7 OK	J7-X	
MW5-2	J3-Y	Mod: K801 & Driver PS S2a OK	J7-Z	
MW5-3	J3-Z	Mod: Filaments & Low Voltage ON	J7-G	
MW5-4	J3-a	Mod: Power Amp Filaments ON	J7-S	
MW5-5	J3-b	Mod: High Voltage Ready (Standby)	J7-j	
MW5-6	J3-c	Mod: High Voltage ON	J7-R,J8-D,J9-B	
MW5-7	J3-d	Mod: Modulator in Auto Control	J7-g	
MW5-8	J3-e	750CU: Anode Prg Inhibit Output	J9-P	1 = Inhibit
MW5-9	J3-f	750CU: Control Power Fault	J9-R	1 = Fault
MW5-10	J3-g			
MW5-11	J3-h			
MW5-12	J3-i			
MW5-13	J3-j			
MW5-14	J3-k			
MW5-15	J3-m			

MIU	DCC - IN	DESCRIPTION	DCC - OUT	POLARITY
COMMON	J4-A	COMMON	J8-A, J9-b	
5V	J4-B			
	J4-C			
MW6-0	J4-D	MEICU: External Interlock Tripped	J8-F	1 = Trip
MW6-1	J4-E	MEICU: Anode Program Enabled	J8-G	1 = Enabled
MW6-2	J4-F	MEICU: Incomplete RFGapEnvelope Cycle	J8-H	1 = Incompl
MW6-3	J4-G	MEICU: Cavity Short Not Out	J8-J	0 = Not Out
MW6-4	J4-H	MEICU: Cavity Humidity High	J8-K	0 = High
MW6-5	J4-J	MEICU: Repeated RFGapEnvelope Faults	J8-L	0 = Fault
MW6-6	J4-K	MEICU: Computer Generated Trip	J8-M	0 = Trip
MW6-7	J4-L	MEICU: Cavity Water Leak Trip	J8-N	0 = Trip
MW6-8	J4-M	MEICU: Vacuum Pressure High Trip	J8-P	0 = Trip
MW6-9	J4-N	MEICU: Cavity Humidity Interlock Disabled	J8-R	0 = Disabled
MW6-10	J4-P	MEICU: Repeated RFGE Fault Interlock Disabled	J8-S	0 = Disabled
MW6-11	J4-R	MEICU: Computer Generated Trip Disabled	J8-T	0 = Disabled
MW6-12	J4-S	MEICU: Cavity Water Leak Disabled	J8-U	0 = Disabled
MW6-13	J4-T	MEICU: Vacuum Pressure High Disabled	J8-V	0 = Disabled
MW6-14	J4-U	MEICU: Cavity Short OUT	J8-W	0 = OUT
MW6-15	J4-V	MEICU: Cavity Short IN	J8-X	0 = IN

MW7-0	J4-W	MEICU: Cavity Short IN Manual Override (Forced IN)	J8-Y	0 = Override
MW7-1	J4-X	MEICU: RFGE Above Threshold (RF ON)	J8-Z	1 = Above
MW7-2	J4-Y			
MW7-3	J4-Z			
MW7-4	J4-a			
MW7-5	J4-b			
MW7-6	J4-c			
MW7-7	J4-d			
MW7-8	J4-e			
MW7-9	J4-f			
MW7-10	J4-g			
MW7-11	J4-h			
MW7-12	J4-i			
MW7-13	J4-j			
MW7-14	J4-k			
MW7-15	J4-m			

MIU	DCC - IN	DESCRIPTION	DCC - OUT	POLARITY
COMMON	J5-A			
5V	J5-B			
	J5-C			
CW0-0	J5-D	(Remote): FBS Contactor Closed/Open Control	J6-a	
CW0-1	J5-E	(Remote): FBS AC Over-I Reset	J6-b	
CW0-2	J5-F			
CW0-3	J5-G			
CW0-4	J5-H	(Remote): Modulator Reset	J1-H,J7-B,J8-E,J9C	
CW0-5	J5-J	(Remote): Mod Filaments & Low Voltage ON/OFF	J7-F	
CW0-6	J5-K	(Remote): Mod High Voltage ON/OFF Control	J7-P	
CW0-7	J5-L	(Remote): MEICU Comp Generated Trip of Modulator	J8-B	1 = Trip
CW0-8	J5-M	(Remote): MEICU Cavity Short IN Command	J8-C	1 = IN
CW0-9	J5-N	(Remote): 750CU Spark Count Reset	J9-S	
CW0-10	J5-P			
CW0-11	J5-R			
CW0-12	J5-S			
CW0-13	J5-T			
CW0-14	J5-U			
CW0-15	J5-V			

CW1-0	J5-W			
CW1-1	J5-X			
CW1-2	J5-Y			
CW1-3	J5-Z			
CW1-4	J5-a			
CW1-5	J5-b			
CW1-6	J5-c			
CW1-7	J5-d			
CW1-8	J5-e			
CW1-9	J5-f			
CW1-10	J5-g			
CW1-11	J5-h			
CW1-12	J5-i			
CW1-13	J5-j			
CW1-14	J5-k			
CW1-15	J5-m			

Note:

J1: MW0 & MW1	**J6: FBS**
J2: MW2 & MW3	**J7: MCU**
J3: MW4 & MW5	**J8: MEICU**
J4: MW6 & MW7	**J9: REMOTE**
J5: CW0 & CW1	**J10: NOT USED**
	J11: NOT USED

DESCRIPTIONS:

MCU: Modulator Control Unit
SSD: Solid State Driver Control Unit
FBS: Ferrite Bias Supply
MEICU: Modulator External Interlock Control Unit
Remote: Computer Control Signal

Originator:	Tim Berenc	April 10, 2001
Drawn By:	Rick Zifko	August 27, 2002
Checked By:		
Approved By:		

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

DRAWING NAME
ORIGINAL BOOSTER HLRF SYSTEM
COMPUTER CONTROL (DCC)
INTERNET RACK MONITOR (IRM), WORD ASSIGNMENTS

DRAWING NUMBER
xxxx.020-EB-xxxxxx