Designator	Part Type	Footprint	Rating	Tol	Notes	part #	
R1	2200k	400 axial	.25W	0,05	carbon	40704	2200k
R2	8k45	400 axial	.25W	0,01	metal	40408	8.45k
R3	33k2	400 axial	.25W	0,01	metal	40412	33.2k
R4A	0.1r	600 axial	.5W	0,05	metal	40105	0r1
R4B	0.1r	600 axial	.5W	0,05	metal	40105	0r1
R5	1k	400 axial	.25W	0,05	carbon	40420	1k
R6	1k	400 axial	.25W	0,05	carbon	40420	1k
R7	3k3	400 axial	.25W	0,05	carbon	40718	3.3k
R8	47k	400 axial	.25W	0,05	carbon	40417	47k
R9	3k9	1000 axial	5W	0,05	metal	40421	3.9k
R10	2k	150 axial	2W	0,05	metal	40748	2k
R11	665r	400 axial	0.5W	0,01	metal	40112	665r
R12	665r	400 axial	0.5W	0,01	metal	40112	665r
R13	2k	150 axial	2W	0,05	metal	40748	2k
R14	4k7	400 axial	.25W	0,05	carbon	40405	4.7k
R15	100k	400 axial	.25W	0,05	carbon	40406	100k
R16	820r	150 axial	2W	0,05	metal	40101	820r
R17	820r	150 axial	2W	0,05	metal	40101	820r
R18	330k	400 axial	.25W	0,05	carbon	40470	330k
R19	1k	400 axial	.5W	0,05	carbon	40420	1k
R20	4k7	400 axial	.25W	0,05	carbon	40405	4.7k
R21	10k	400 axial	.25W	0,05	carbon	40409	10k
R22	2k2	400 axial	0.5W	0,05	carbon	40410	2.2k
R26	1000k	400 axial	.25W	0,05	carbon	40701	1000k
R27	24k9	400 axial	.25W	0,01	metal	40411	24k9
R28	10k	400 axial	.25W	0,05	carbon	40409	10k
R29	470r	400 axial	.25W	0,01	metal oxide	40103	470r
R30	274k	400 axial	.25W	0,01	metal	40413	274k
R31	49k9	400 axial	.25W	0,01	metal	40414	49.9k
R32	470k	400 axial	.25W	0,05	carbon	40415	470k
R35	332k	400 axial	.25W	0,01	metal	40424	332k
R36	47k	400 axial	.25W	0,05	carbon	40417	47k
R37	22k	400 axial	.25W	0,05	carbon	40418	22k
R38	47k	400 axial	.25W	0,05	carbon	40417	47k
R39	6k04	400 axial	.25W	0,01	metal	40419	6.04k
R40	47k	400 axial	.25W	0,05	carbon	40417	47k
R42	100k	400 axial	.25W	0,05	carbon	40406	100k
R43	100k	400 axial	.25W	0,05	carbon	40406	100k

R44	10k	400 axial	.25W	0,05	carbon	40409	10k
R45	10k	400 axial	.25W	0,05	carbon	40409	10k
R46	47r	400 axial	.25W	0,05	carbon	40111	47r
R48	6k04	400 axial	.25W	0,01	metal	40419	6.04k
R49	68K	400 axial	.25W	0,05	carbon	40421	68k
R53	100r	150 axial	2W	0,05	carbon	40106	100r
R54	100r	150 axial	2W	0,05	carbon	40106	100r
R55	100r	150 axial	2W	0,05	carbon	40106	100r
R56	100r	150 axial	2W	0,05	carbon	40106	100r
R57	100k	400 axial	.25W	0,05	carbon	40106	100k
LEVEL	5k	POTENTIOMET	0,25	0,1	SINGLE LOG POT	40402	5k
LOPASS	100k	POTENTIOMET	0,25	0,2	LIN POT SINGLE	40401	100k
LoPass Pot shield wire	*	*	24 GAUGE	*	Wire from pot body to ground		

Designator	Part Type	Footprint	Rating	Tol	Notes		
C1	3300uF	300-500 radial	50V	+80 / -2	Electrolytic 105C	30701	3300u
C2	3300uF	300-500 radial	50V	+80 / -2	Electrolytic 105C	30701	3300u
C3	100nF	400 axial	50V	0,2	mono ceramic	30502	100n
C4	100nF	400 axial	50V	0,2	mono ceramic	30502	100n
C5	100nF	400 axial	50V	0,2	mono ceramic	30502	100n
C6	10uF	150 radial	100V	0,2	BP/NP Electrolytic DF< .1	30712	10uF
C7	2n7F	400 axial	50V	0,1	mono ceramic	30509	2.7n
C7A	100nF	400-600 axial	100V	0,2	mono ceramic or film	30505	100n
C7B	100nF	400-600 axial	100V	0,2	mono ceramic or film	30505	100n
C8	100nF	400 axial	50V	0,1	mono ceramic	30504	100n
C9	100nF	400 axial	50V	0,2	mono ceramic	30502	100n
C10	100nF	400 axial	50V	0,05	mono ceramic or film	30530	100n
C11	100uF	200 radial	35V	0,2	Electrolytic	30702	100u
C12	10uF	100-200 radial	35V	+80/-20	Electrolytic	30714	10u
C13	1nF	400 axial	50V	0,2	mono ceramic	30506	1n
C14	100nF	400 axial	50V	0,1	mono ceramic	30504	100n
C15	200uF	200 radial	50V	0,2	BP Elect. 105C	30707	200u
C16	200uF	200 radial	50V	0,2	BP Elect. 105C	30707	200u
C17	100nF	400 axial	50V	0,2	mono ceramic	30502	100n
C18	100nF	400 axial	50V	0,05	mono ceramic or film	30530	100n
C19	100nF	400 axial	50V	0,05	mono ceramic or film	30530	100n
C20	100nF	400 axial	50V	0,05	mono ceramic or film	30530	100n
C21	10nF	400 axial	50V	0,1	mono ceramic	30508	10n
C24	100nF	400/600 axial	50V	0,2	mono ceramic	30502	100n
C25	3n3F	400 axial	50V	0,1	mono ceramic	30513	3.3n
C28	10nF	400 axial	50V	0,2	mono ceramic	30502	100n
CMC	2m2H	*	5 Amp	0,05	Neosid 28-523C36	80100	2.2mH choke
L1	110uH	*	0,05	0,05	MCI1436 Capped E core	80101	110uH choke
L2	2.2uH	400 axial	0,05	0,05	BLO2RN2-R62	80102	2.2uH ferrite bead
D1	1N5256B	400 axial	30V	0,05	.5w Zener	50101	1N5256B
D3	1N4749A	400 axial	24V	0,05	1w Zener	50102	1N4749A
D6	1N5234B	400 axial	6.2V	0,05	.5w Zener	50103	1N5231B
D7	1N4148	400 axial	100V	*	Signal Diode	50104	1N4148
D8	1N4148	400 axial	100V	*	Signal Diode	50104	1N4148
D9	1N4744A	400 axial	15V	0,05	1w Zener	50105	1N4744A
D10	1N4744A	400 axial	15V	0,05	1w Zener	50105	1N4744A

Q1	MPSA13	TO92	30V	*	NPN 500mA	60151	MPS A13
Q2	2N3906	TO92	40V	*	PNP 200mA	60152	2N3906
Q3	2N4401	TO92	40V	*	NPN 600mA	60156	2N4401
Q4	MPSA56	TO92	80V	*	PNP 500mA	60154	MPS A56
Q5	MPSA56	TO92	80V	*	PNP 500mA	60154	MPS A56
BR RECT	R9004	*	6AMP	*	BRIDGE RECTIFIER	60100	Bridge Rect
U1	LM324	DIP 14	*	*	*	60100	LM324
LED1	2 Clr LED		*	*	2 LEGGED	50106	Dual Cir LED

Designator	Part Type	Footprint	Rating	Tol	Notes		
SPK-	0.187"	200 radial	*	*	QUICK FIT TERMINAL	70324	PCB fastons 0.187"
SPK+	0.187"	200 radial	*	*	QUICK FIT TERMINAL	70324	PCB fastons 0.187"
AC Feed	0.187"	200 radial	*	*	QUICK FIT TERMINAL	70324	PCB fastons 0.187"
AC Return	0.187"	200 radial	*	*	QUICK FIT TERMINAL	70324	PCB fastons 0.187"
GND	0.187"	200 radial	*	*	QUICK FIT TERMINAL	70324	PCB fastons 0.187"
RCA	CONNECTOR	90Deg	*	*	Dual, Silver	108320	Dual RCA input jacks
HIGH-LEVEL	TERMINAL	*	*	*	SPRING CLIP (Speaker level I/O)	108115	High level input and output terminals
Manually Added In Amtec							
C add	10uF	*	1000V	*	Across SW	30713	10nF
D add	1N4735A	*	6.2V	0,05	1W Zener	50113	1N4735A
FUSE (On FUSE PCB)	0.315A	5X20mm	250V	*	Slo Blo	80131	0.315maL "t" fuse F1 version
MODULE	S53	MODULE	*	*	*	60301	S53AMI
SW	SPST	*	6A, 250V	*	PSW-01	70151	power switch D112/D115
TRX	MCI 4338E	*	100VA	Conc W	*	80128	Transformer #4338E, BU80e/Dig10

REVISIONS	DATE	DETAILS OR ECN#
2	10-janv-00	Q3 changed to 2N4401, PCBs updated.
3	28th Apr 2000	R10/13 (1k) to 2k, R11/12 (330r) to 665r, R9 to 5W only
		R46 (4r7) to 47r
		C6 to 10uF100V DF<.1
4	7th Sept 2000	Converted MC5 BOM to Protel For

DIGITAL 10 TESTING PROCEDURE

A. Power Amp Section

1. Resistance Check
   Resistance from O/P of themodule to GND should be >30K (NO LOAD)
   Resistance from V+ of the nodule to V- of the module should read >5k
   Resistance from V+ of the nodule to O/P of the module should read >30K
   Resistance from V- of the nodule to O/P of the module should read >30K

2. Power Up LED RED

3. D.C. Operation

   -Voltage measurements (DVM)

Between	+6V	V+	O/P	V-	+15V	S/D	FR	I/P	GND	-15V
And	V-	GND	GND	GND	GND	V-	GND	GND	GND	GND
Reading	+6.0V	+/-0.1v	0V	-40.1V	+15.5V	+5.5V	0V	0V	0V	-15.5V

4. Check Switching Frequency

   -Use scope (EITHER USES AN ISOLATION TRANSFORMER OR ATTACHES THE PROBE TIP TO SPK- and REFERENCE LEAD TO SPK+)
   -Reacing 100kHz +/-10%, <1Vpp

B. Pre Amp Section

1. Low Level Input Sersitivity
   -Set up Turn level and Low-Pass Pot Fully CW
   Generator set at 100mV@39Hz
   Signa to Low level input

   -Voltage measurements

OP AMP				SPEAKER O/P
U1(1)	U1(14)	U1(7)	U1(8)	
492mV	1.07V	5.22V	4.67V	13.0V

2. High Level Input Sensitivity
   -Set up Turn level and Lo Pass Pot Fully CW
   Set Generator at 1V@39Hz
   Signa to High level input

   -Voltage measurements 6.09V at speaker output

3. Low-Pass

-Set up Set Generator at 100mV@100Hz
Signal to Low level input
Measure voltage at speaker output

-Voltage measurements

Low-Pass Pot Setting	Output
CW	3.29V
CCW	3.53V

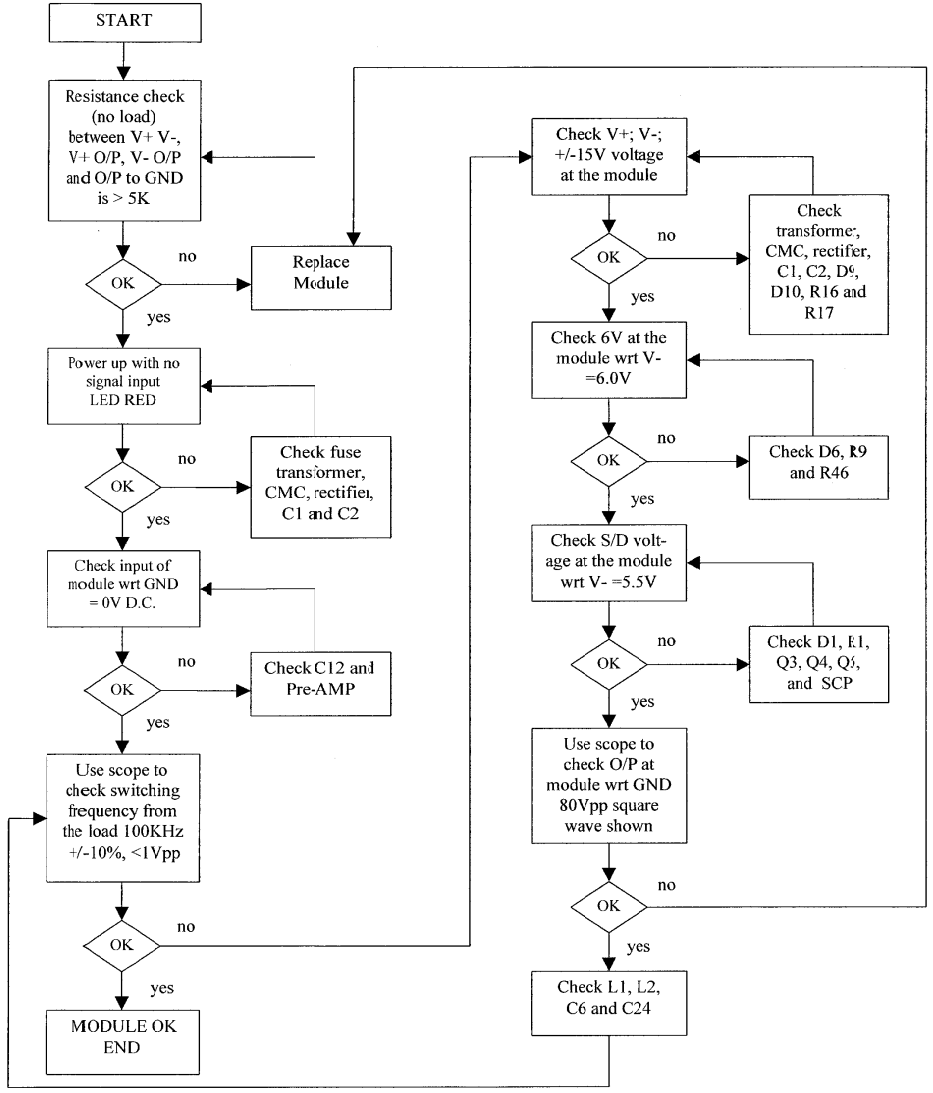
4. LED

-With a35mV input signal at a single Low level input LED should change to green

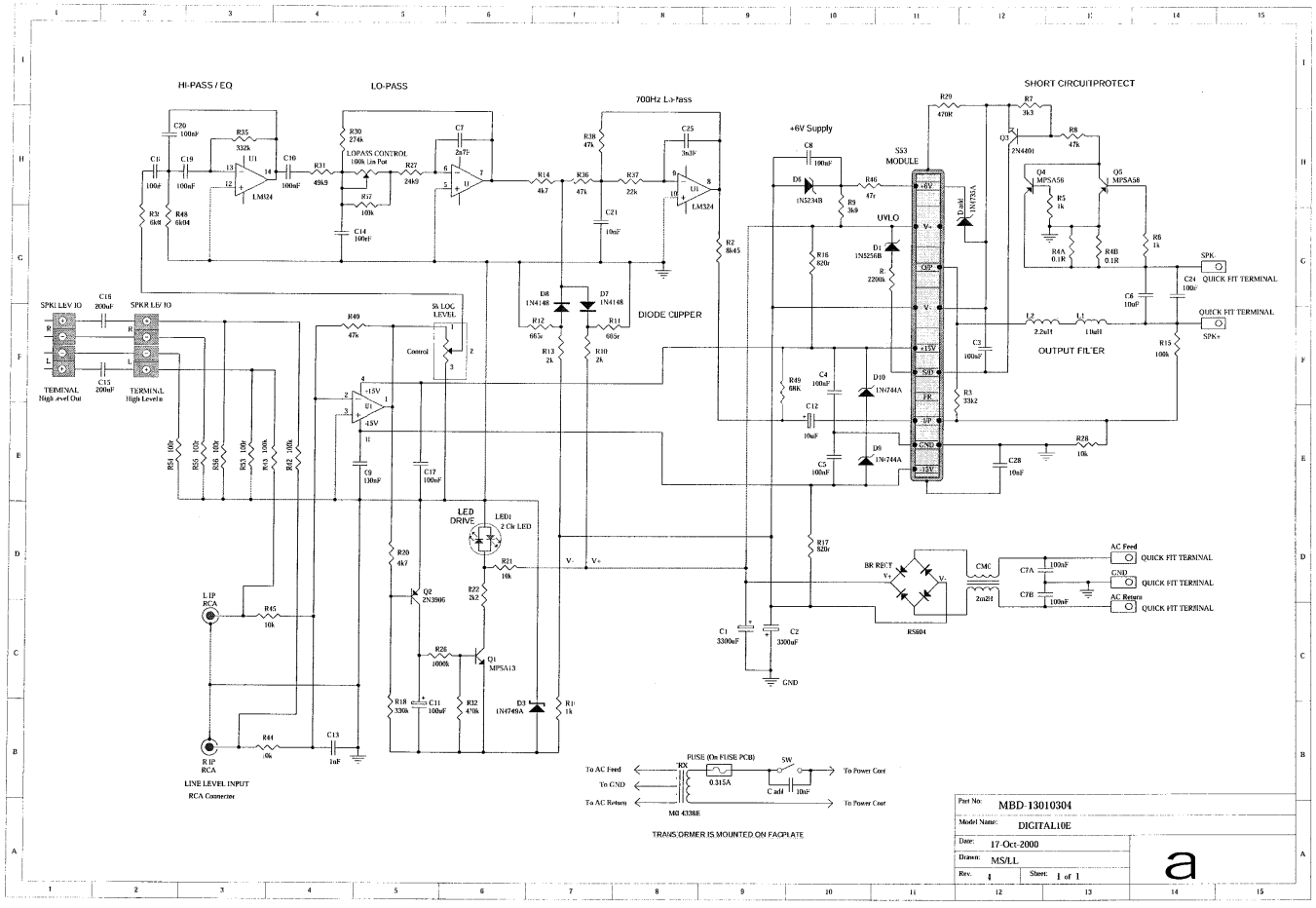
See flow chart over for diagnostics.

DIGITAL 10 POWER MODULE TESTING FLOW CHART

CAUTION : MODULE OUTPUT IS FLOATING AND IS ***NOT*** PROTECTED AGAINST A SHORT TO GROUND. ALL TEST INSTRUMENTS CONNECTED TO THE OUTPUT ***MUST*** BE FLOATING. ATTACH THE SCOPE PROBE TIP TO SPK - and REFERENCE LEAD TO SPK-.



DIG 10


HI-PASS / EQ
LO-PASS
700Hz Low-pass
SHORT CIRCUITPROTECT
+6V Supply
SS3 MODULE
UVLO
DIODE CLIPPER
OUTPUT FILTER
SPKR LEV IO
TERMINAL High Level Out
TERMINAL High Level In
LOPASS CONTROL 100k Lin Pot
LED DRIVE
LED1 2 Clr LED
LINE LEVEL INPUT
RCA Connector
LM324
MPSA13
MPSA56
2N3906
2N4401
1N4744A
1N4148
1N5234B
1N5256B
RS804
MO 4338E
FUSE (On FUSE PCB)
0.315A
TRANSFORMER IS MOUNTED ON FACPLATE
To AC Feed
To GND
To AC Return
To Power Cord
QUICK FIT TERMINAL
AC Feed
GND
AC Return
SPK-
SPK+
Part No: MBD-13010304
Model Name: DIGITAL10E
Date: 17-Oct-2000
Drawn: MS/LL
Rev: 1
Sheet: 1 of 1
a