

3. Block diagram

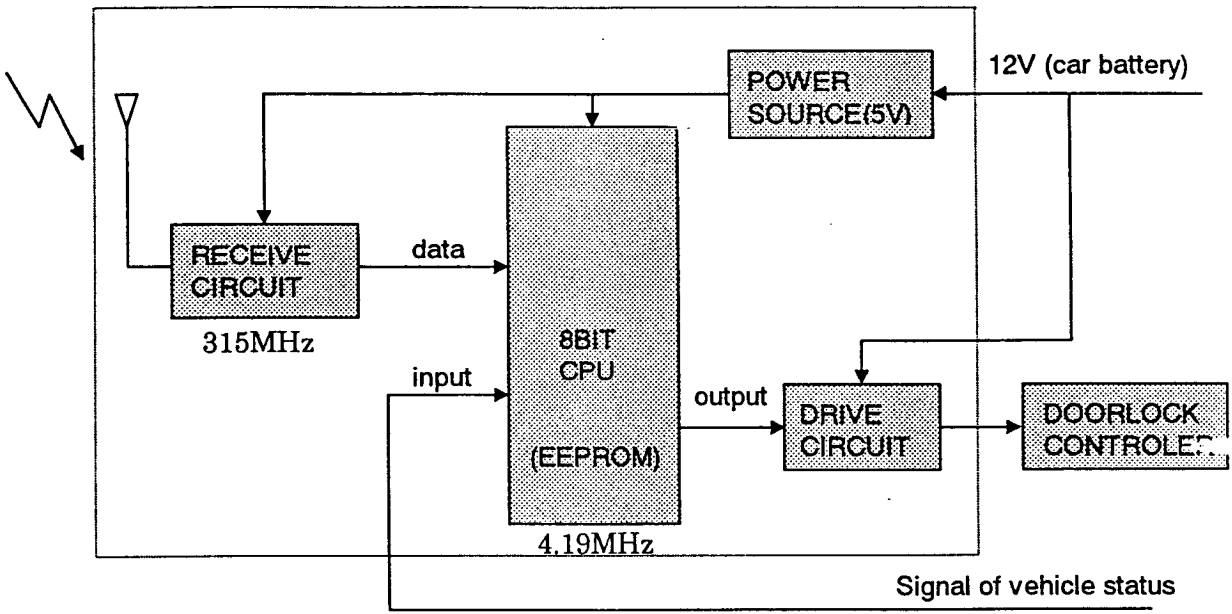


figure 3.1 block diagram of the receiver

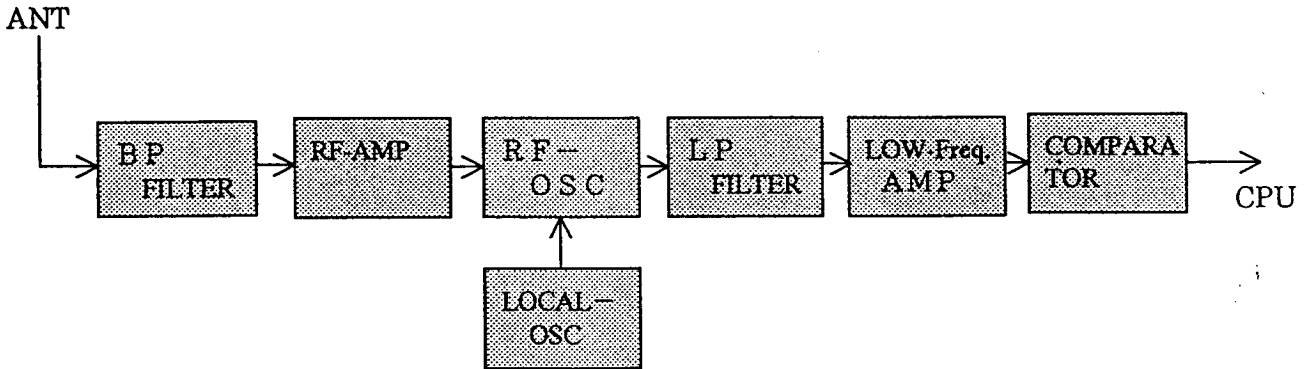


figure 3.2 block diagram (receiver Circuit)

6. PCB

6.1 Circuit diagram

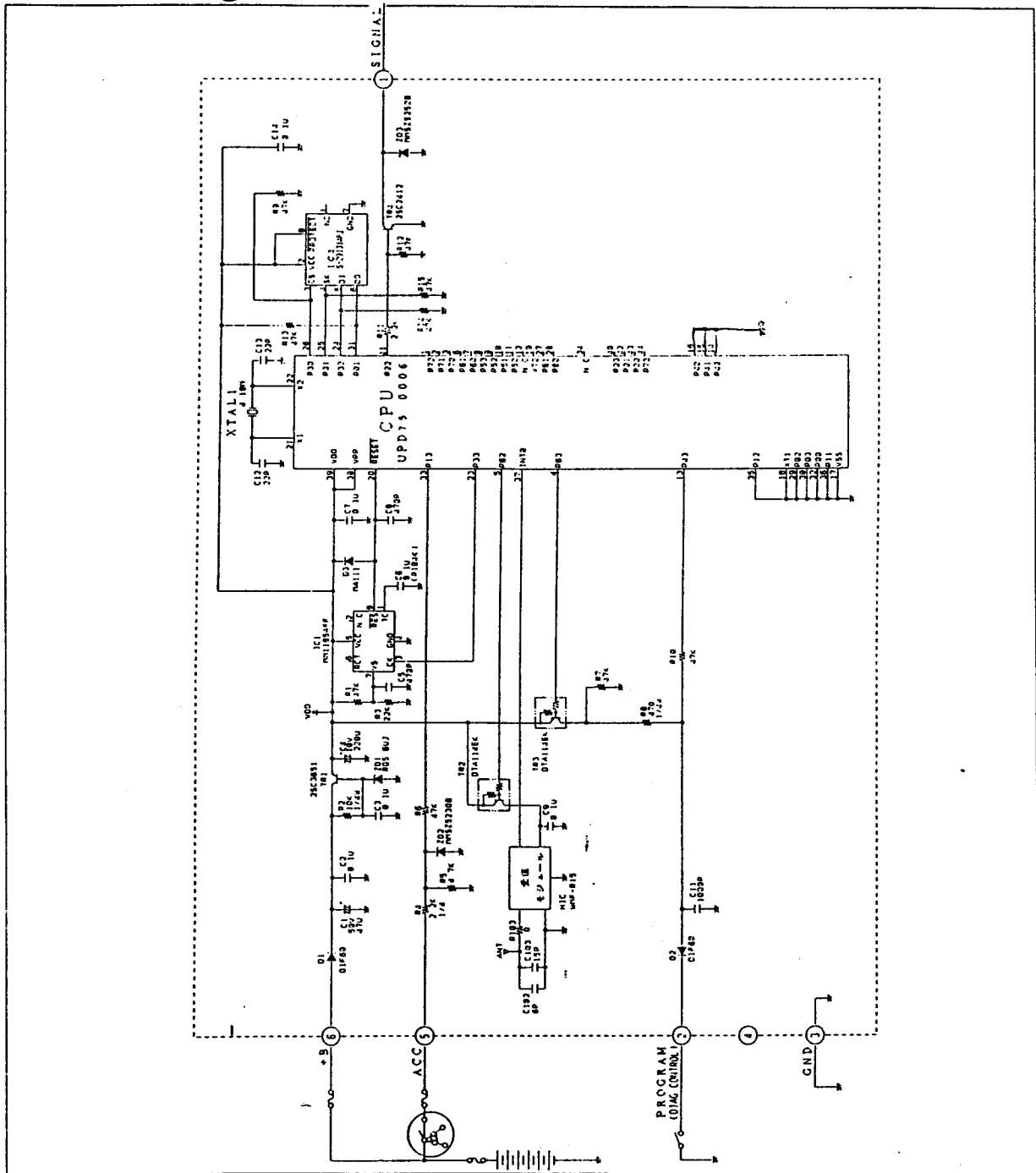


figure 6.1 Circuit diagram

6.2 Parts layout

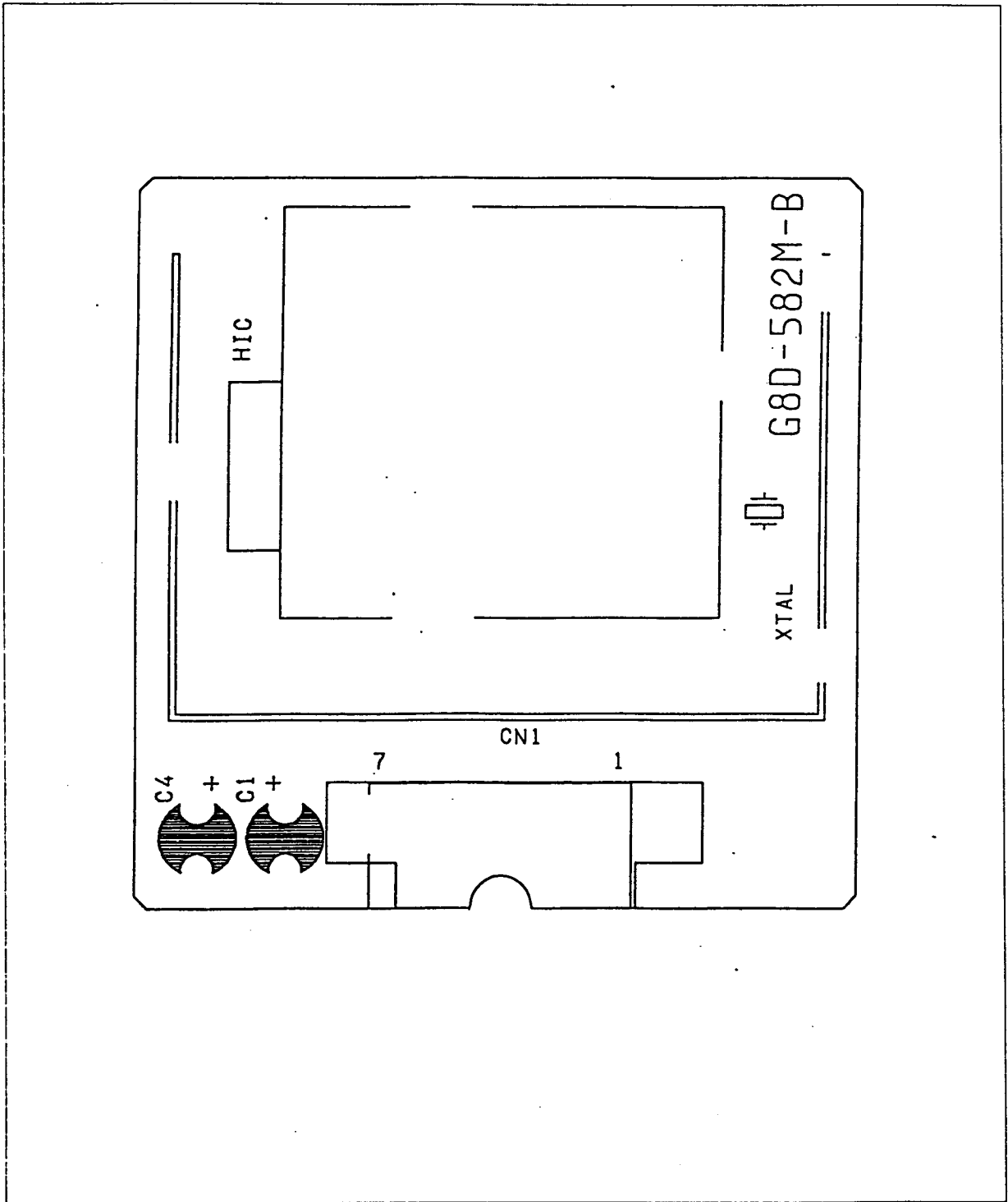


figure 6.2.1 Electrical parts layout (front)

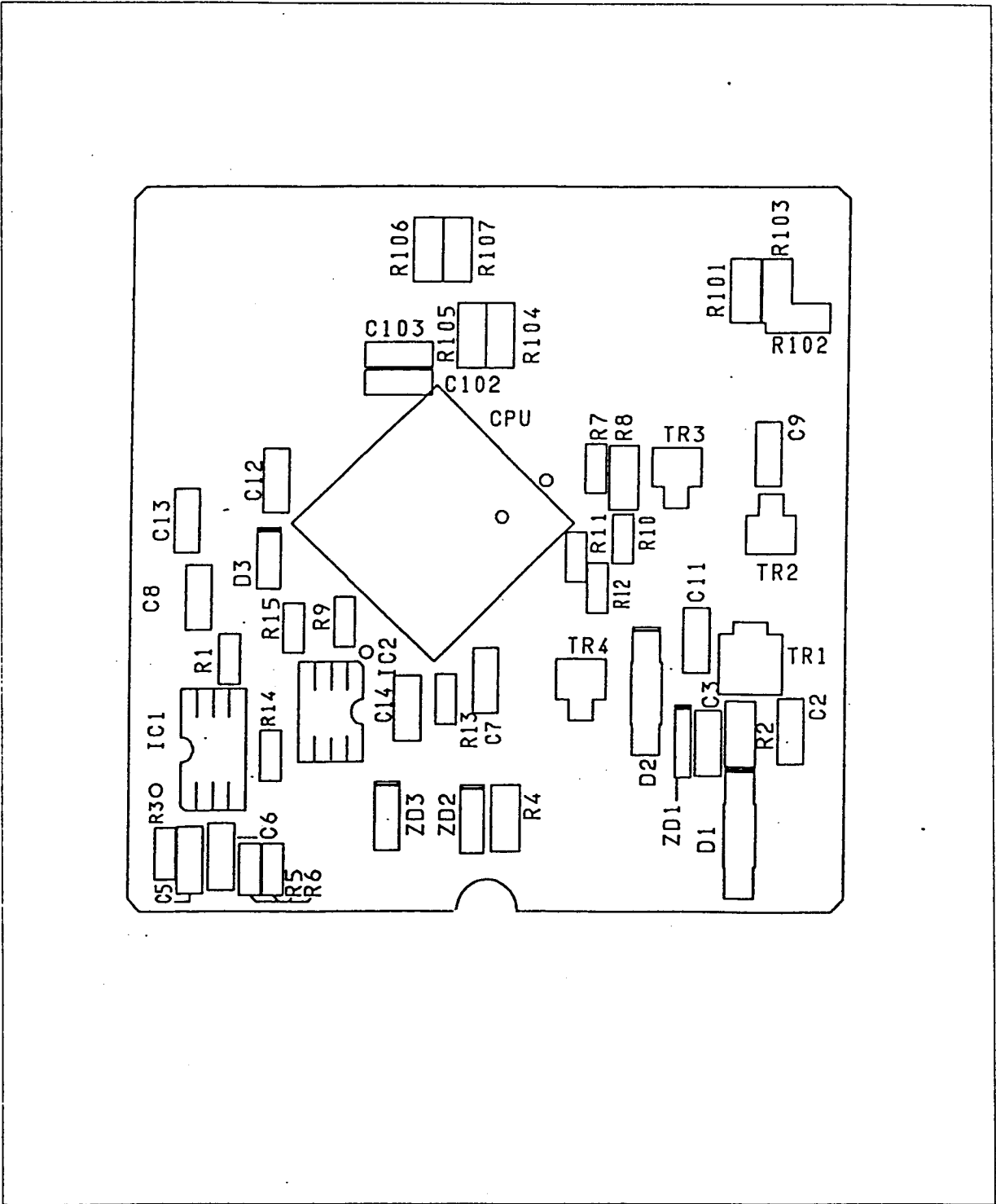


figure 6.2.2 Electrical Parts layout (back)

6.3 Printed circuit pattern

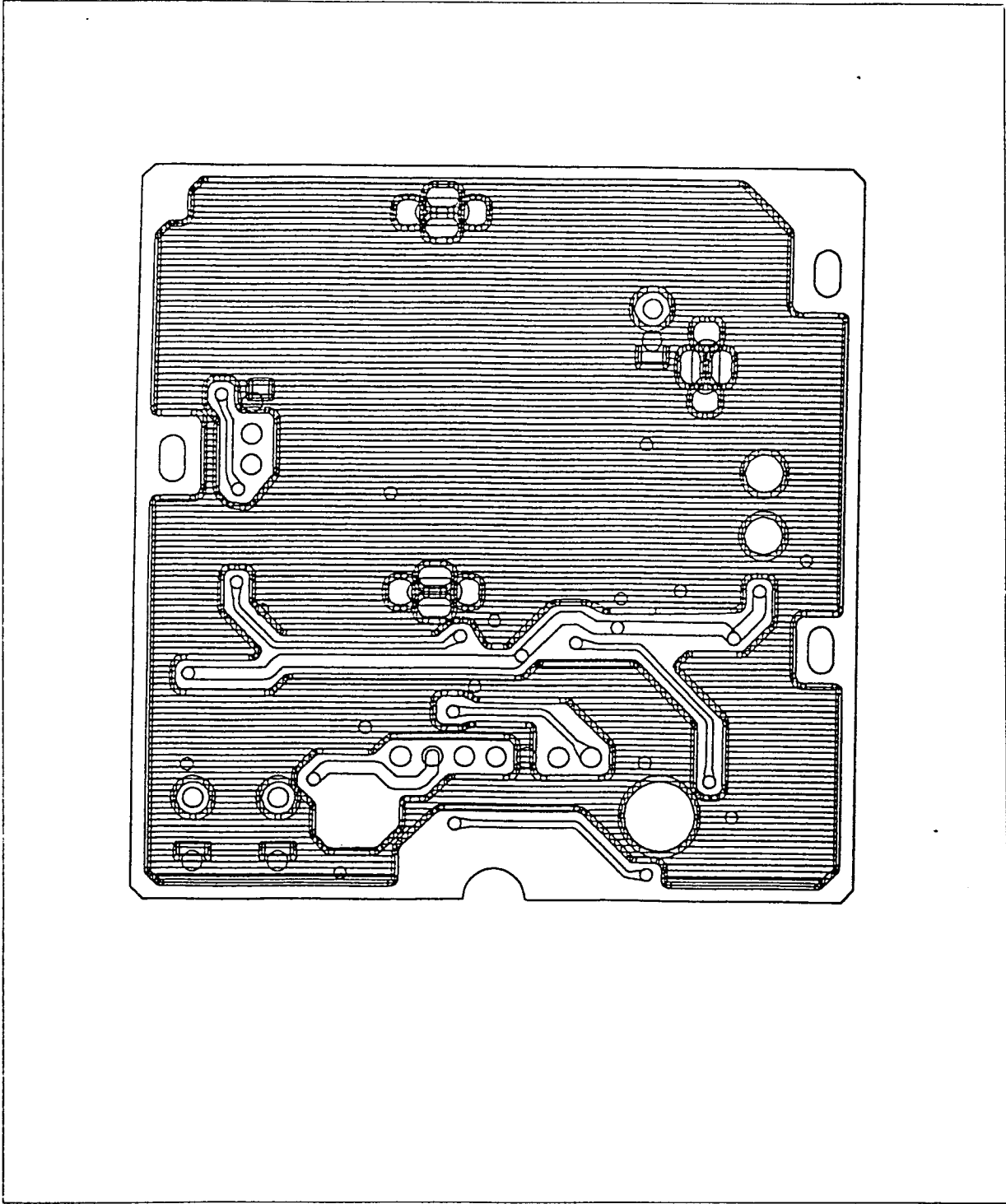


figure 6.3.1 Printed circuit pattern (front)

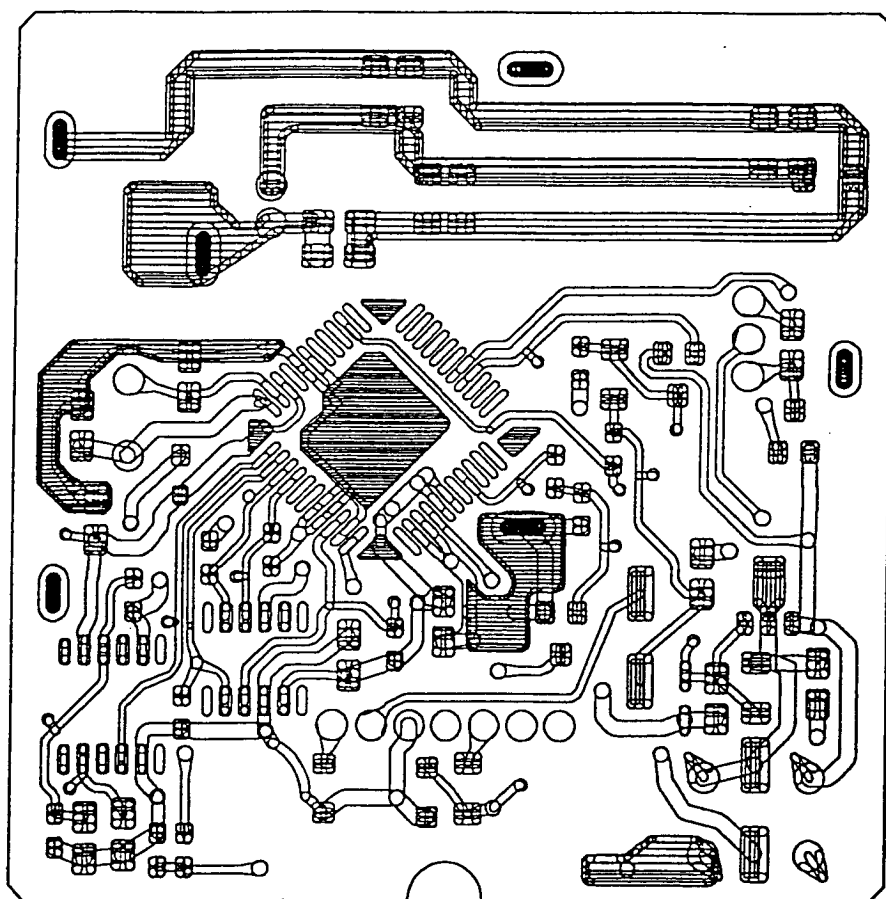


figure 6.3.2 Printed circuit pattern (back)

6.4 Parts List

No.	PART NAME	MAKER	QTY.	TYPE	SPECIFICATION	REMARKS
1	PWB		1	FCL-CEM335D216	t=1.6	
2	CPU	NEC	1	μ PD750006GB-XXX	QFP 44PIN	CPU1
3	RESET IC	MITSUMI elec.	1	MM1185	SOP 8PIN	IC1
4	EEPROM	SEIKO elec.	1	S-29131AF	SOP 8PIN	IC2
5	RF MODULE	MITSUMI elec.	1	WMF-R15	315.00MHz	HIC1
6	CRYSTAL RESONATOR	DAISHINKU	1	AT-49	4.19MHz	XTAL1
7	TRANSISTOR	SANYO	1	2SC3651-TD		Tr1
8	//	ROHM	2	DTA114EKAT146	-50mA, -50V	Tr2,3
9	//	//	1	2SC2412KT146R	150mA, 50V	Tr4
10	DIODE	SHINDENGEN	2	DIF60-4063	1A, 600V	D1,2
11	//	MATSUSHITA	1	MA111		D3
12	ZENER DIODE	NEC	1	RD5.6UJN2-T1	150mW	ZD1
13	//	MOTROLA	1	MMSZ5230B-T1		ZD2
14	//	//	1	MMSZ5252B-T1		ZD3
15	ELECTROLYTIC CAPACITOR		1	CE11R85B1H470-T1	47 μ , 50V	C1
16	//		1	ECA1A221B	220 μ , 10V	C4
17	CERAMIC CAPACITOR		5	CKM-L20F1H104Z-T2	0.1 μ , 50V	C2,3,7,9,14
18	//		2	CKM-L20R1H471K-T2	470P, 50V	C5,8
19	//	MURATA industry	1	GRK40-034R104KPT	0.1 μ , 50V	C6
20	//		1	CKM-L20R1H102K-T2	1000P, 50V	C11
21	//		2	CCM-L20CH1H220J-T2	22P, 50V	C12,13
22	//		1	CCM-L20CH1H060D-T2	6P, 50V	C102
23	//		1	CCM-L20CH1H150J-T2	15P, 50V	C103
24	CHIP RESISTOR		9	RK20CAY47KJ-T1	47K Ω , 1/10W	R1,6,7,9,10,12,13,14,15
25	//		1	RK32CAY10KJ-T1	10K Ω , 1/4W	R2
26	//		1	RK20CAY22KJ-T1	22K Ω , 1/10W	R3
27	//		1	RK32CAY2.2KJ-T1	2.2K Ω , 1/4W	R4
28	//		1	RK20CAY4.7KJ-T1	4.7K Ω , 1/10W	R5
29	//		1	RK32CAY470J-T1	470 Ω , 1/4W	R8
30	//		1	RK20CAY2.2KJ-T1	2.2K Ω , 1/10W	R11
31	//		3	RK20CAY00-T1	0 Ω	R103
32	CONNECTOR	NIHON AMP	1	175506-2	6PIN	CN1
33	ANTENNA		1	C2680R 1/2H t=0.5		
34	BRACKET		1	SECC 20/20 t=1.2		
35	CASE		1	ABS		
36	BASE		1	ABS		
37	TAPPING SCREW	SANKYOU	2		M3 \times 8	
38						
39						

6.5 Connector

This is the pin assignment of the connector.

No.	I/O	Assignment	Memo random
1	OUTPUT	Signal	Active Low
2	INPUT	Program	Active Low
3		GND	Ground
4		(not used)	Open
5	INPUT	ACC	Active High
6		Battery	+12V

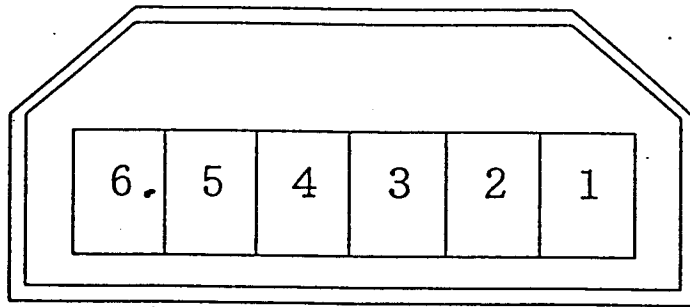


figure 6.5 the shape of the connector

7. RF module (receive circuit)

7.1 Circuit diagram

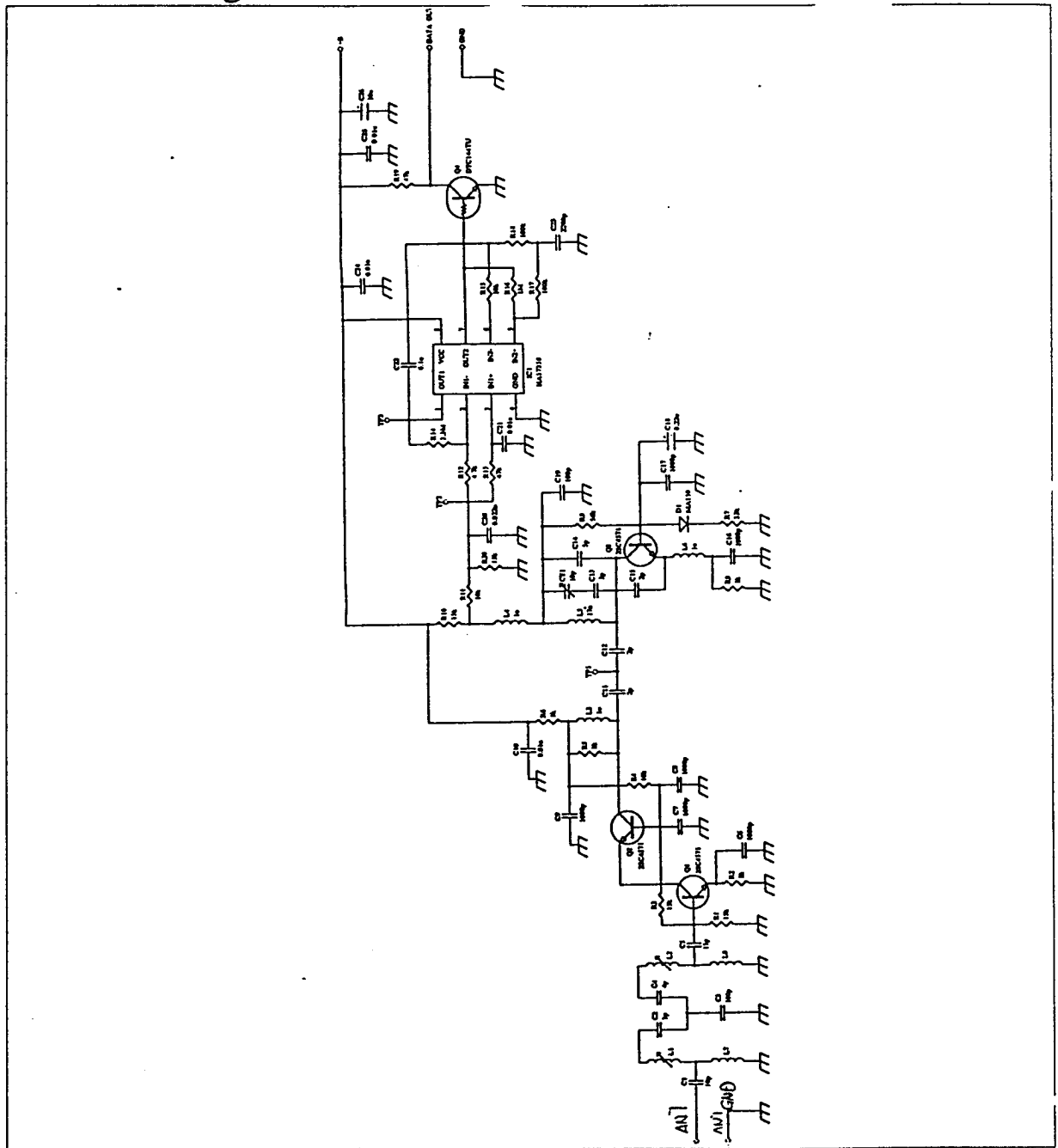


figure 7.1 WMF-R15 Circuit diagram

7.2 Parts List

No	PARTS NAME	MAKER	QTY	TYPE	SPECIFICATION	REMARKS
1	PCB	TOCHIGI DENSHI KOGYO	1		t=0.8	
2	IC	HITACHI	1	HA17358F		IC1
3	TRANSISTOR	NEC Corp.	3	2SC4571		Q1,Q2,Q3
4	↑	Rohm Co. Ltd.	1	DTC144TUA		Q4
5	DIODE	MATUSHITA	1	MA110		D1
6	INDUCTOR	Uchida Mfg. Co., Ltd.	2			L1,L2
7	↑	Taiyoyuden Co., Ltd.	2		1 μ H	L4,L6
8	↑	Murata Mfg. Co., Ltd.	1		17nH	L5
9	CHIP INDUCTOR	Taiyoyuden Co., Ltd.	1	(1608)	1 μ H	L3
10	CERAMIC CAPACITOR	MATUSHITA or MURATA	1	↑	10 p F	C1
11	↑	↑	2	↑	5 p F	C2,C14
12	↑	↑	2	↑	1 0 0 p F	C3,C19
13	↑	↑	1	↑	4 p F	C4
14	↑	↑	1	(2125)	1 5 p F	C5
15	↑	↑	6	(1608)	1 0 0 0 p F	C6,7,8,9,16,17
16	↑	↑	4	↑	0.01 μ F	C10,21,24,25
17	↑	↑	2	(2125)	2 p F	C11,12
18	↑	↑	1	(1608)	3 P F	C13
19	↑	↑	1	↑	2 p F	C15
20	↑	↑	2	↑	0.022 μ F	C20
21	↑	↑	2	↑	0.1 μ F	C22
22	ELECTROLYTIC CAPACITOR	Matsushita , NEC	1		0.22 μ F / 35V	C18
23	↑	Matsushita Elec. Co.	1		10 μ F / 16V	C26
24	TRIMMER CAPACITOR	Kyosera Corp.	1		10 p F	TC1
25	CHIP RESISTOR	Matsushita , Rohm	4	(1608)	1 5 K Ω	R1,3,10,20
26	↑	↑	3	↑	1 K Ω	R2,5,9
27	↑	↑	2	↑	1 0 K Ω	R4,R11
28	↑	↑	1	(2125)	1 K Ω	R6
29	↑	↑	1	(1608)	3 3 K Ω	R7
30	↑	↑	1	↑	5 6 K Ω	R8
31	↑	↑	1	↑	4 . 7 K Ω	R12

No	PARTS NAME	MAKER	QTY	TYPE	SPECIFICATION	REMARKS
32	CHIP RESISTOR	Matsushita , Rohm	2	(1608)	47KΩ	R13,R19
33	↑	↑	1	(2125)	10KΩ	R15
34	↑	↑	1	(1608)	1MΩ	R16
35	↑	↑	2	↑	100KΩ	R17,R18
36	CONNECTER	Iriso Elec. Co., Ltd.	1	2pin		CN1
37	↑	↑	1	3pin		CN2
38	CASE		1			
39	CAVER		1			
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