

**Version: 1PM044C2**

**Date: Feb. 26. 2007**

# **SERVICE MANUAL**

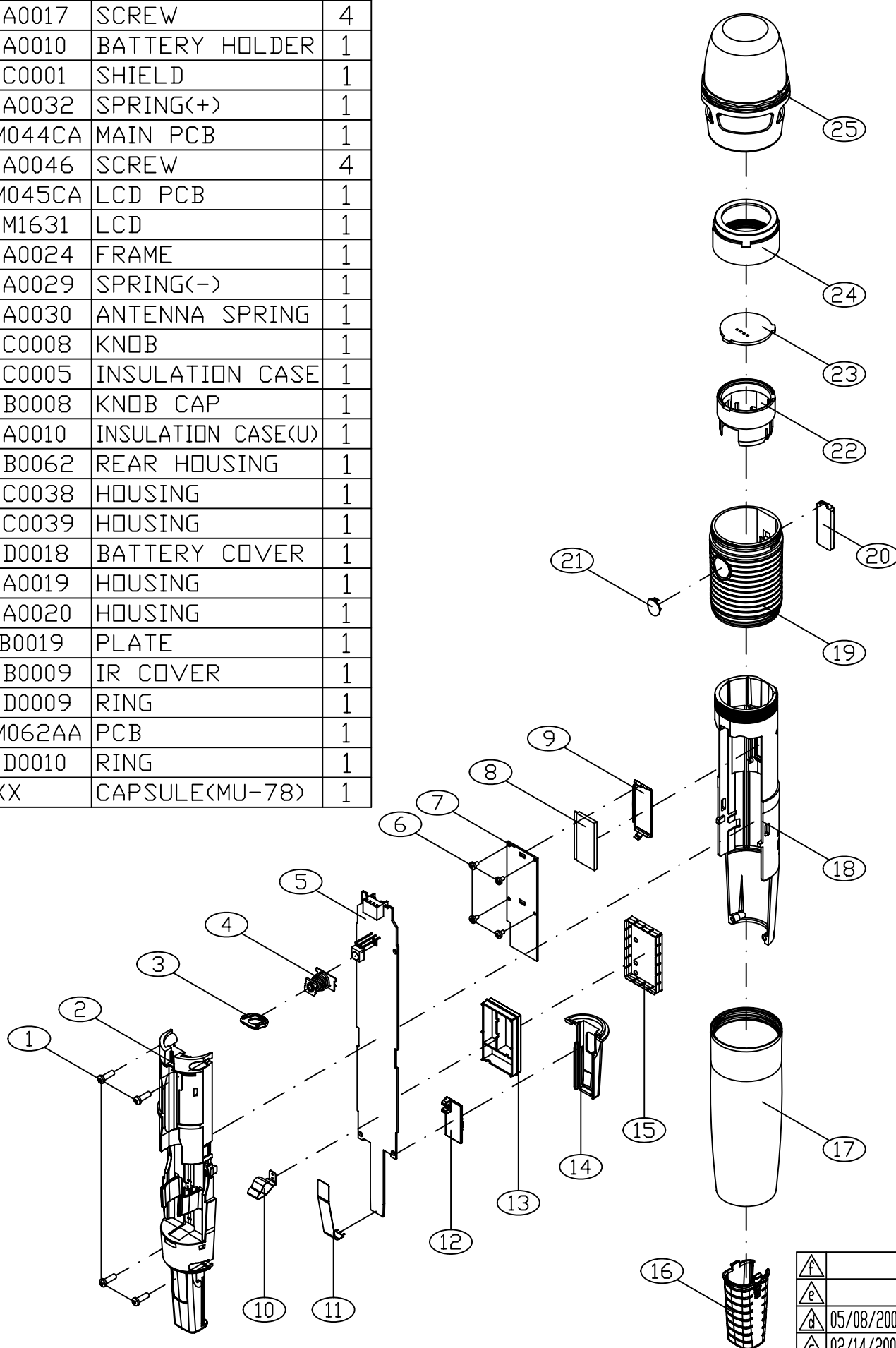
## **ACT-7H TRANSMITTER**

===== **MIPRO** =====

## SPECIFICATIONS FOR ACT-7H TRANSMITTER

ITEM	SPECIFICATIONS
1. FREQUENCY RANGE	620MHz~950MHz
2. FREQUENCY GENERATION	Phase Locked Loop (PLL) technique
3. SWITCHING BANDWIDTH	24MHz
4. CHANNEL GRID	25KHz
5. FREQUENCY STABLE	$\pm 0.005\%$ 0 ~ +50
6. MODULATION	FM
7. RF OUTPUT POWER (50 OHMS LOAD)	<50mW
8. SPURIOUS EMISSION	<4nW
9. NOMINAL DEVIATION	$\pm 40$ KHz
10. AUDIO FREQUENCY RANGE	80~18,000Hz
11. DISTORTION (AT 1KHZ AND NOMINAL DEV)	<0.3%
12. PRE-EMPHASIS	25uS
13. BATTERY	AA3(1.5V) $\times 2$
14. CURRENT CONSUMPTION	Approx. 80mA
15. OPERATION VOLTAGE	1.9V~3V
16. ANTENNA	Build in Antenna
17. DIMENSION (MM)	50(D) $\times$ 265(L)
18. WEIGHTS	Approx. 270g
19. ENVIRONMENTAL	Full SPECS -10 to 60

NO.	SERIAL NO.	DESCRIPTION	Q'TY
1	1MSA0017	SCREW	4
2	1QHA0010	BATTERY HOLDER	1
3	1QGC0001	SHIELD	1
4	1QGA0032	SPRING(+)	1
5	3PM044CA	MAIN PCB	1
6	1MSA0046	SCREW	4
7	3PM045CA	LCD PCB	1
8	1DLM1631	LCD	1
9	1QGA0024	FRAME	1
10	1QGA0029	SPRING(-)	1
11	1QGA0030	ANTENNA SPRING	1
12	1QHC0008	KNOB	1
13	1BEC0005	INSULATION CASE	1
14	1QHB0008	KNOB CAP	1
15	1BEA0010	INSULATION CASE(U)	1
16	1QEB0062	REAR HOUSING	1
17	1QEC0038	HOUSING	1
	1QEC0039	HOUSING	1
18	1QHD0018	BATTERY COVER	1
19	1QEA0019	HOUSING	1
	1QEA0020	HOUSING	1
20	1QIB0019	PLATE	1
21	1QHB0009	IR COVER	1
22	1QCD0009	RING	1
23	3PM062AA	PCB	1
24	1QCD0010	RING	1
25	XXXX	CAPSULE(MU-78)	1

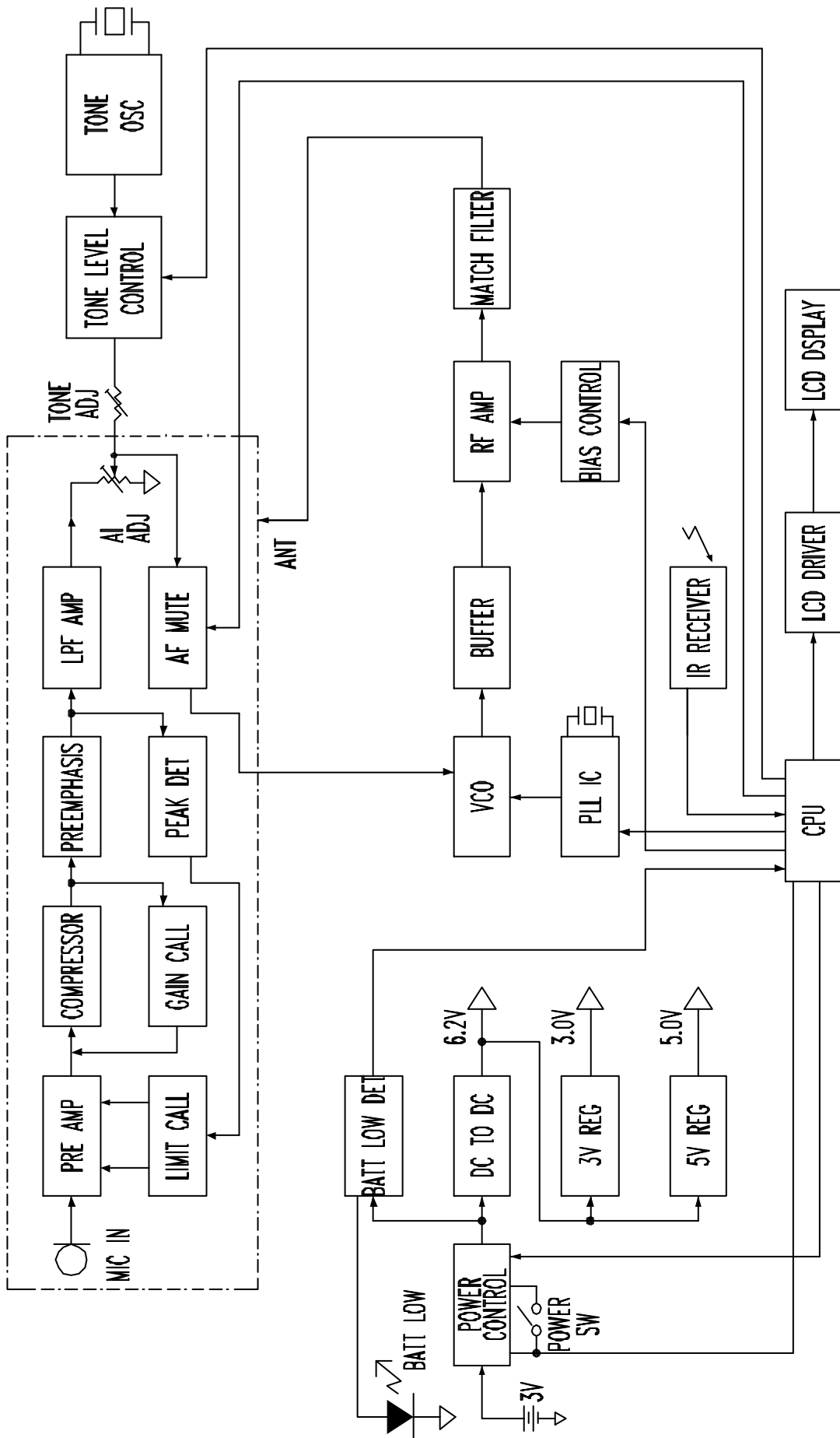


▲	
▲	
▲	05/08/2006
▲	02/14/2005
▲	01/08/2003

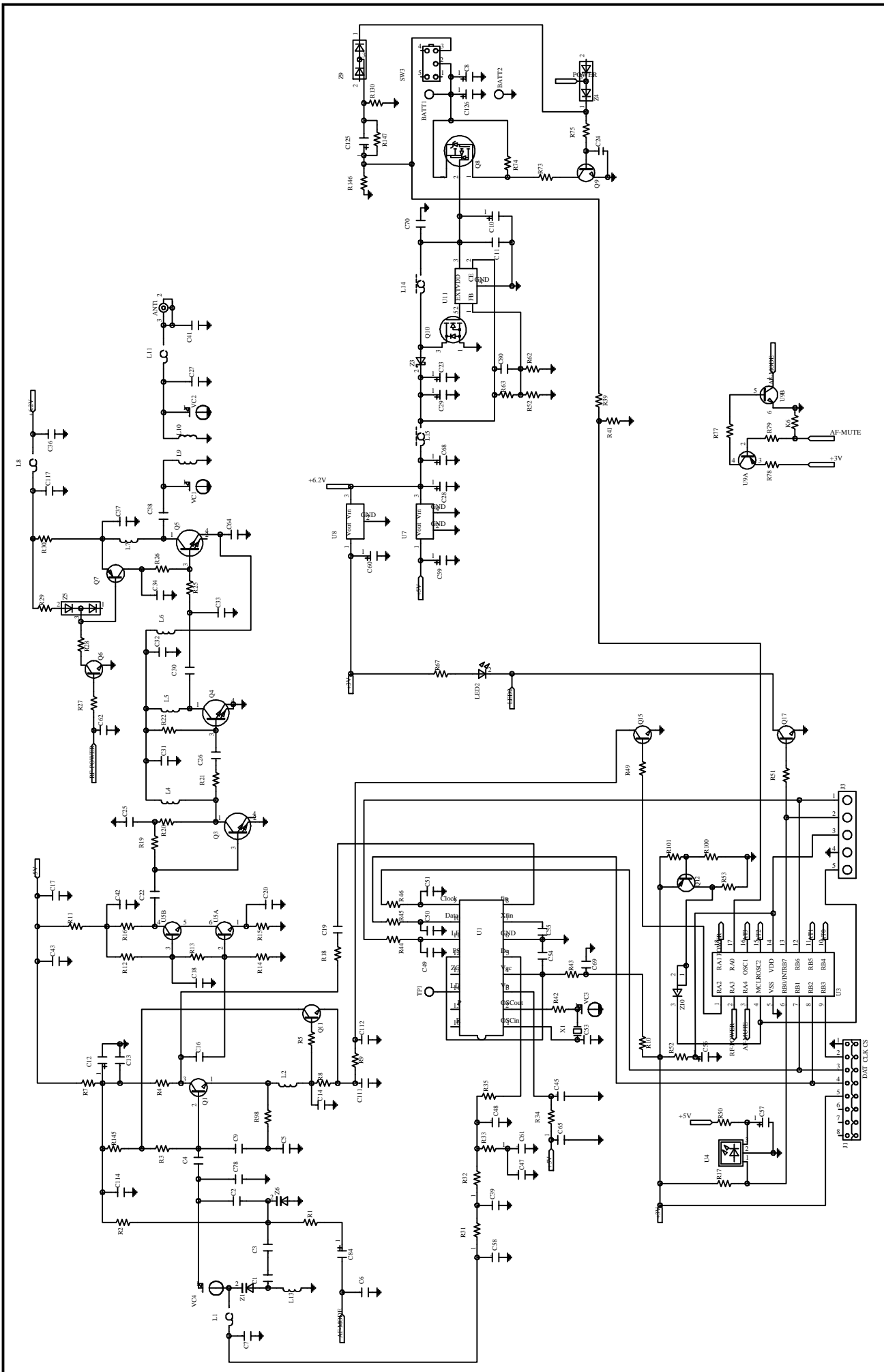
圖號 NUMBER	ACT707HMU01D	機型 MODEL	ACT-707HM/ACT-7H	品名 DESCRIPTION	爆炸圖 (ASSEMBLY)	版本 VISION	
日期 DATE	04/10/2002	比例 SCALE	1=3.5 A4	材質 MATERIAL			
設計 DESIGNED	TENDR	繪圖 DRAWN	BALL	核准 APPROVED	Michael		



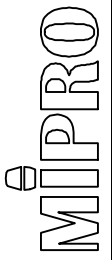
BLOCK DIAGRAM

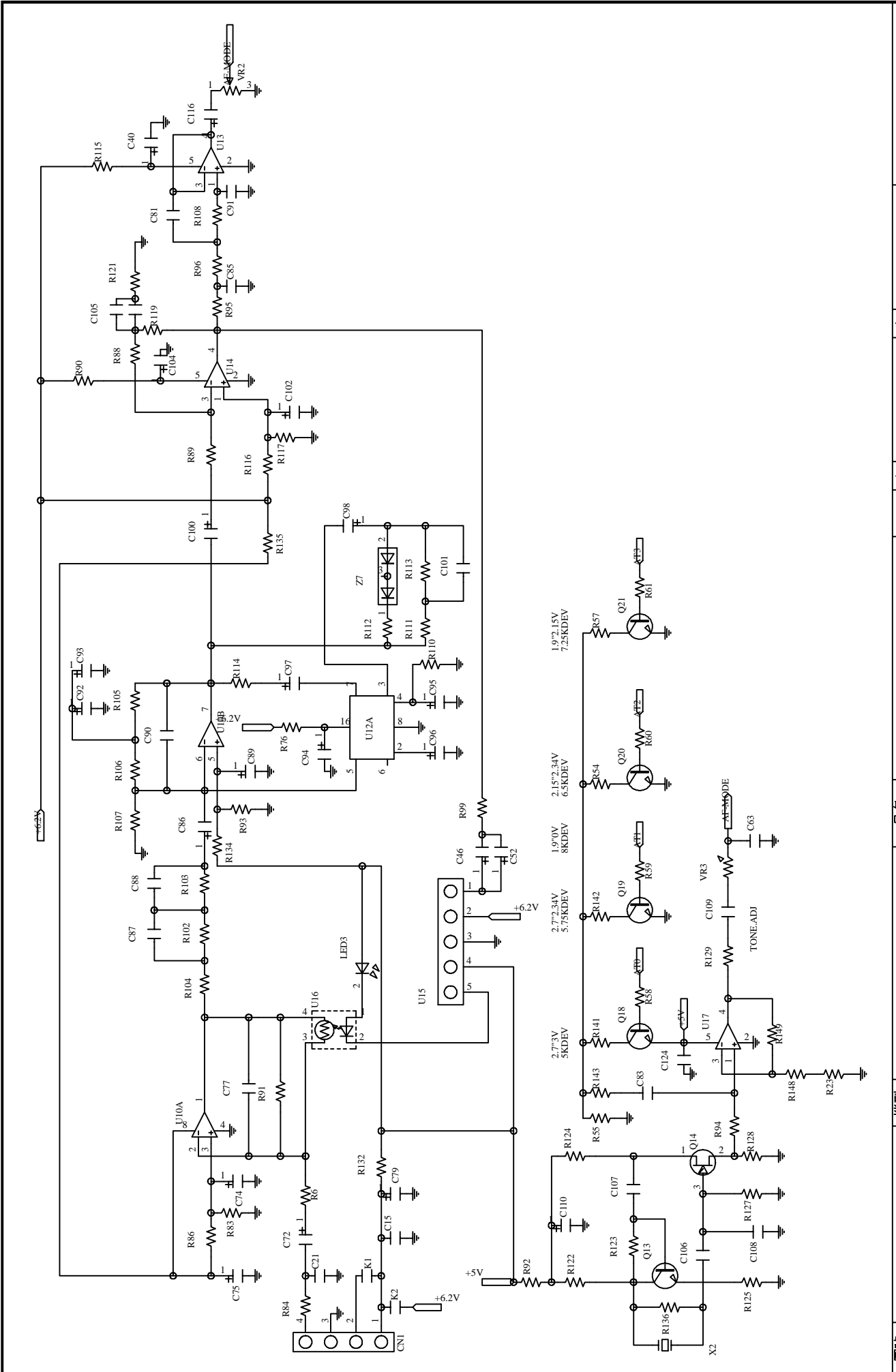


圖號 NUMBER	ACT7HQ01A	機型 MODEL	ACT-7H	品名 DESCRIPTION	方塊圖(BLOCK DIAGRAM)	版本 VERSION	MIPRO
日期 DATE	12/02/2005	比例 SCALE	1=1 A4	材質 MATERIAL			
設計 DESIGNED	MICHAEL	繪圖 DRAWN	CANDY	核准 APPROVED	MICHAEL		

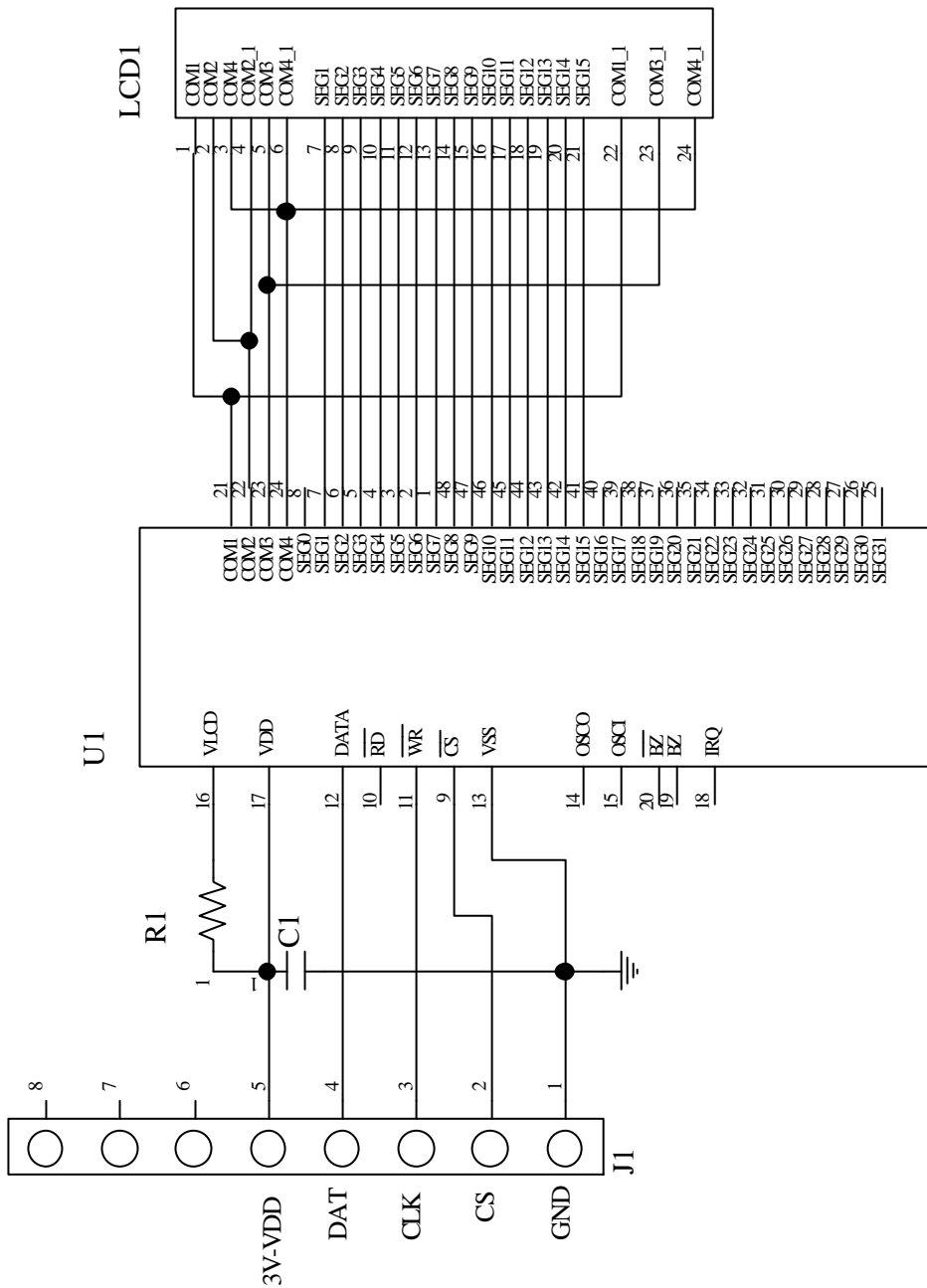


圖號 NUMBER	1CM044CA-C1	機型 MODEL	ACT-707HM (M044C2)	品名 DESCRIPTION	CIRCUIT (RF)	版本 VISION			
日期 DATE	05/06/2004	比例 SCALE	A4	材料 MATERIAL					
設計 DESIGNED	TENDR	繪圖 DRAWN	TSAE	核准 APPROVED	MICHAEL				

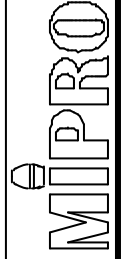




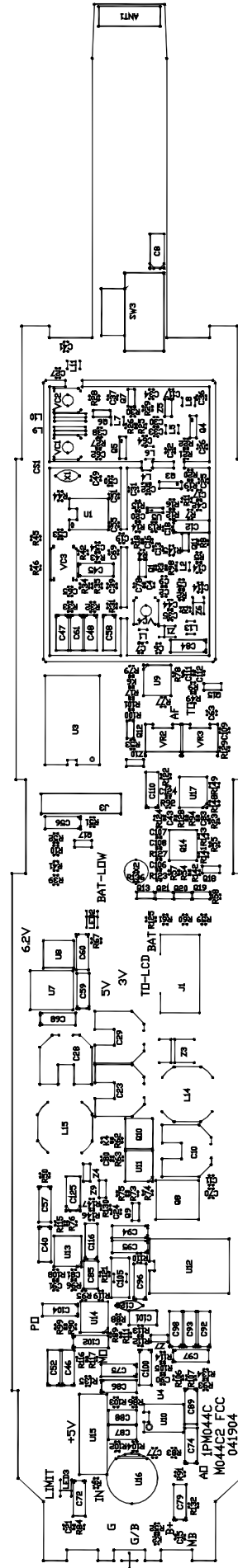
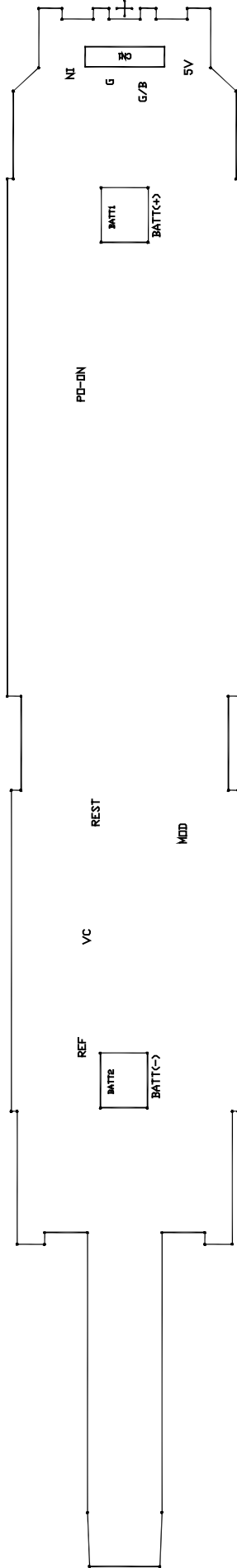
圖號 NUMBER	1CM044CA-C2	機型 MODEL	ACT-707HM (M04C2)	品名 DESCRIPTION	CIRCUIT (AUDIO)	版本 VISION	△	△	△	MIPRO
日期 DATE	05/06/2004	比例 SCALE	A4	材料 MATERIAL						
設計 DESIGNED	TENDOR	繪圖 DRAWN	TSAE	核准 APPROVED	MICHAEL					



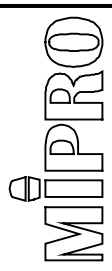
圖號 NUMBER	1CM045CA-C1	機型 MODEL	ACT-7H (M045C1)	品名 DESCRIPTION	LCD-CIRCUIT	(G)
日期 DATE	10/18/2004	比例 SCALE	1 / 1 / A4	材號 MATERIAL		(E)
設計 DESIGNED	TENOR	繪圖 DRAWN	TSAE	核准 APPROVED	Michael	(C)
					版本 VERSION	(B)



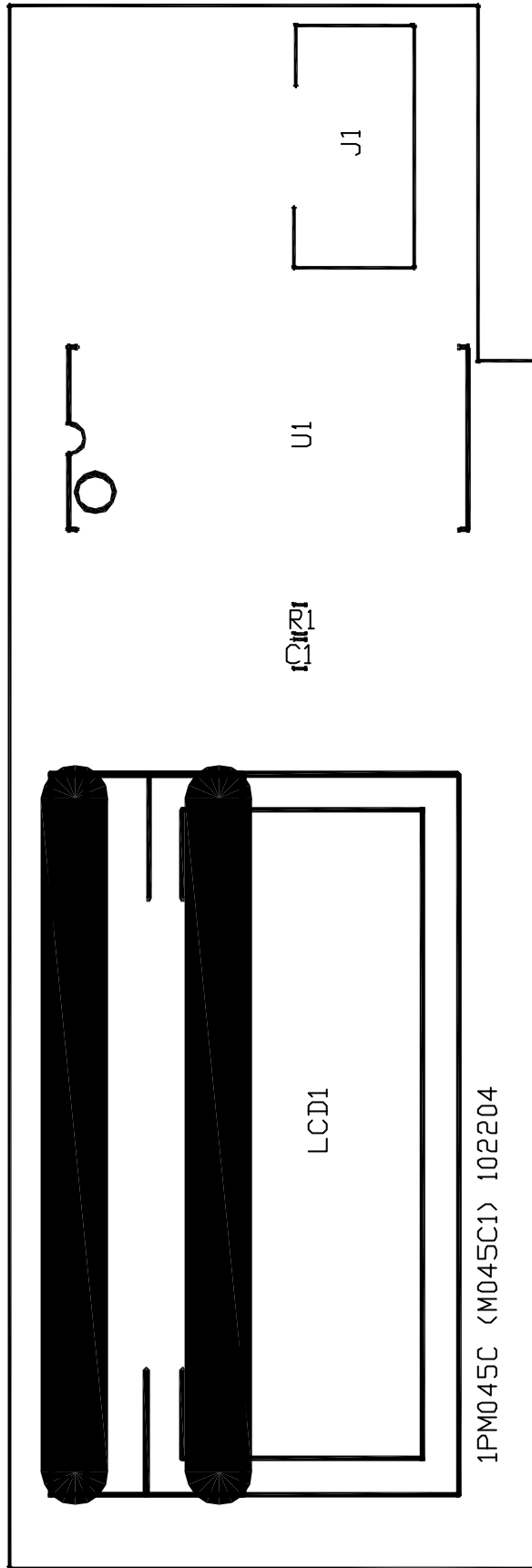
# PARTS REFERENCE



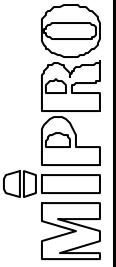
圖號 NUMBER	1PM044C-F1/F2	機型 MODEL	1PM044C (M044C2)	品名 DESCRIPTION	PARTS REFERENCE		版本 VISION	△	△	△
日期 DATE	05/19/2004	比例 SCALE	A4	材料 MATERIAL	核准 APPROVED	MICHAEL	VISION	△	△	△
設計 DESIGNED	MICHAEL	繪圖 DRAWN	TSAE	核准 APPROVED	MICHAEL			△	△	△





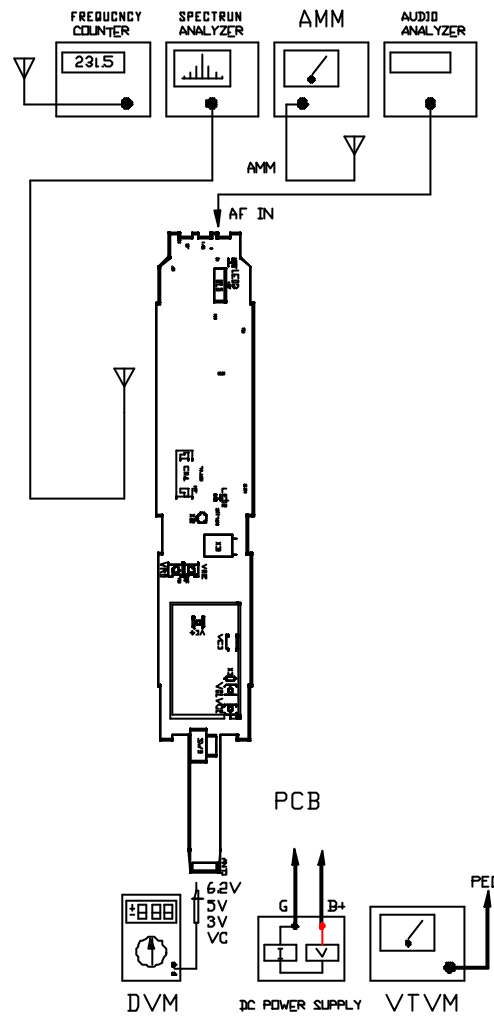


圖號 NUMBER	1PM045CA-F1	機型 MODEL	ACT-7H(M045C1)	品名 DESCRIPTION	PARTS REFERENCE		圖號 NUMBER	圖號 NUMBER	圖號 NUMBER
日期 DATE	09/21/2005	比例 SCALE	1-0.3 A4	材質 MATERIAL	版本 VERSION		圖號 NUMBER	圖號 NUMBER	圖號 NUMBER
設計 DESIGNED	TENDR	繪圖 DRAWN	BALL	核准 APPROVED	Michael		圖號 NUMBER	圖號 NUMBER	圖號 NUMBER



# TEST AND ALINGNMENT INSTRUCTIONS

## 1、 Measuring instruments and test set-up



### 2.Pre-set

- A、 Audio analyzer : 400Hz , —19.9dBV.
- B、 DC power supply : 3V OUT
- C、 Spectrum analyzer : Frequency start 10MHz  
Frequency stop 2.9GHz

# TEST AND ALINGNMENT INSTRUCTIONS

NO	MEASUREMENT ADJUSTMENT	SET-UP	OBSERVATION	TEST POINT	ADJ	NORMAL VALUE
1	“BATT-LOW” LED	DC POWER SUPPLY 3V	“BATT-LOW” LED	BAT + , BAT -	NO	LED flash one time when switch ON
2	DC TO DC	DC POWER SUPPLY 3V	DC VOLTAGE METER	6.2V	NO	+ 6.2V ± 0.2V
3	VOLTAGE REAULATOR 3V	DC POWER SUPPLY 3V	DC VOLTAGE METER	3V	NO	+ 3V ± 0.25V
4	VOLTAGE REAULATOR 5V	DC POWER SUPPLY 3V	DC VOLTAGE METER	5V	NO	+ 5V ± 0.25V
5	CENTER FREQ TRACKING VOLTAGE	SET TO CENTER FREQ	DC VOLTAGE METER	VC	VC4	2.5V ± 0.1V
6	DOWN FREQ TRACKING VOLTAGE VCO	SET TO DOWN FREQ	DC VOLTAGE METER	VC	VC4	>1V
7	UPER FREQ TRACKING VOLTAGE	SET TO UPER FREQ	DC VOLTAGE METER	VC	VC4	<4V
8	RF OUTPUT POWER	SPECTRUM 1.FULL SPAN 2. Att 20dB 3. CENTER FREQ	SPECTRUM ANALYZET	ANT	VC1,VC2	1.PEAK:109~+115dBuV 2.SPURIOUS>-50dBc
9	CURRENT DISSIPATION	DC POWER SUPPLY 3V	CURRENT MATER	BAT + BAT -	NO	78mA 88mA
10	CENTER FREQUENCY	FRQUENCY COUNTER(100Hz RES)	FREQUENCY COUNTER	ANT	VC3	Fo ± 2KHz
11	AF 0 dB COMPANDOR	1. AUDIO ANALYZER 400Hz	AUDIO ANALYZER	MO	NO	615 mV ± 12mV
12	MODULATION	AUDIO ANALYZER 400Hz	AMM (3.5K LPF)	ANT	VR2	40 ± 1K
13	PREEMPHASIS	AUDIO ANALYZER 5KHz	AMM (15K LPF)	ANT	NO	72 ± 8K LED3 ON
14	TONE DEF (5K DEV)	DC POWER SUPPLY 4V	AMM OR SPECTRUM ANALYZER MARK TO32K (NEXT PEAK)	ANT	VR3	5K ± 0.3K (AMM) -22.5 ± 0.5dB (SPECTRUN )
15	BATT. LOW DISPLAY	DC VOLTAGE 2.2V DC VOLTAGE 2.0V	LED2,LCD LED2,LCD	BAT + BAT -	NO	LED OFF,LCD Batt. Status 1~2 segment LED2 ON,LCD Batt. Ststus no segment
167	BATT. LOW OFF	DC VOLTAGE 1.9V	LCD CURRENT METER	BAT + BAT -	NO	LCD SHOW PoFF I<1mA

## PART LIST

CIRCUIT : 1PM044C2

COMPUCTOR NO.	REFETENCE	VALUE
	BATT1	BATT+
	BATT2	BATT-
	C2	C2
	C4	C4
	C5	C5
1CCS6P471	C6	470P
1CCS6X104	C7	104P
	C9	C9
1CESHA107	C10	100uF
1CCS6X104	C11	104P
1CTSBA106	C12	10uF
1CCS6P471	C13	470P
1CCS6P068	C14	68P
1CCS6X103	C15	103P
1CCS6P047	C16	47P
1CCS6P471	C17	470P
1CCS6P471	C18	470P
1CCS6P006	C19	6P
1CCS6P471	C20	470P
1CCS6P101	C21	100P
1CCS6P010	C22	10P
1CESHA107	C23	100uF
1CCS6X104	C24	104P
1CCS6X103	C25	103P
1CCS6P101	C26	100P
	C27	C27
1CESHA107	C28	100uF
1CESHA107	C29	100uF
	C30	C30
1CCS6P471	C31	470P
1CCS6P471	C32	470P
	C33	C33
1CCS6P101	C34	100P
	C35	C1
1CCS6X102	C36	102P
1CCS6P471	C37	470P
1CCS6P151	C38	150P
1CCS6X104	C39	104P
1CTSBA225	C40	2.2uF
	C41	C41
1CCS6P471	C42	470P
1CCS6X473	C43	473P

ACT7HP01A

COMPUCTOR NO.	REFETENCE	VALUE
	C44	C3
1CTSBA106	C45	10UF
	C46	*
1CTSBA106	C47	10UF
1CTSDA474	C48	0.47UF
1CCS6P101	C49	100P
1CCS6P101	C50	100P
1CCS6P101	C51	100P
	C52	*
1CCS6P047	C53	47P
1CCS6P471	C54	470P
1CCS6X102	C55	102P
1CTSBA105	C56	1UF
1CTSBA225	C57	2.2UF
1CTSDA474	C58	0.47UF
1CTSBA106	C59	10uF
1CTSBA105	C60	1uF
1CTSBA106	C61	10UF
1CCS6P101	C62	100P
1CCS6P471	C63	470P
1CCS6X103	C64	103P
1CCS6P471	C65	470P
1CTSBA105	C66	1uF
1CTSBA106	C68	10uF
1CCS6X103	C69	103P
1CCS6X104	C70	104P
1CTSBA225	C72	2.2uF
1CTSBA225	C74	2.2uF
1CTSAA475	C75	4.7uF
1CCS6P068	C77	68P
	C78	C78
1CTSAA106	C79	10uF
1CCS6X104	C80	104P
1CCS6X103	C81	103P
1CCS6X103	C83	103P
1CTSBA105	C84	1uF
1CCS8P222	C85	222P(2%)
1CTSBA225	C86	2.2uF
1CCS8P102	C87	102P(NPO)
1CCS8X103	C88	103P(0805)
1CTSBA225	C89	2.2uF
1CCS6P020	C90	20P
1CCS6P068	C91	68P

## PART LIST

CIRCUIT : 1PM044C2

COMPUCTOR NO.	REFETENCE	VALUE
1CTSAA106	C92	10uF
1CTSAA106	C93	10uF
1CTSBA225	C94	2.2uF
1CTSDA474	C95	0.47uF
1CTSBA225	C96	2.2uF
1CTSBA225	C97	2.2uF
1CTSBA225	C98	2.2uF
1CTSBA225	C100	2.2uF
1CCS8Y104	C101	104P
1CTSBA225	C102	2.2uF
1CTSBA225	C104	2.2uF
	C105	332P
1CCS6P012	C106	12P
1CCS6X473	C107	473P
1CCS6P036	C108	36P
1CCS6X103	C109	103P
1CTSBA105	C110	1uF
1CCS6P471	C111	470P
1CCS6X102	C112	102P
1CCS6X473	C114	473P
1CTSBA225	C116	2.2uF
1CCS6X102	C117	102P
1CCS6X473	C124	473P
1CTSBA105	C125	1UF
1SFHA04A	CN1	4 PIN
1SCSD08F	J1	8PIN
1SFHB05B	J3	5PIN
1LLS6224	L1	220nH
1LLS8823	L2	82nH
1LLS6224	L3	220nH
1LLS8224	L4	220nH
	L5	L5
1LLS8224	L6	220nH
1LLS8224	L7	220nH
1LLS8224	L8	220nH
	L9	L9
	L10	L10
	L11	L11
	L13	L13
1LLSA476	L14	47uH

ACT7HP01A

COMPUCTOR NO.	REFETENCE	VALUE
1LLSA476	L15	47uH
1DLSR210	LED2	210LT
1DLSR210	LED3	LED
1TS093AW	Q1	1TS093AW
1TS0520X	Q3	1TS0520X
1TS0520X	Q4	1TS0520X
1TS0520X	Q5	1TS0520X
1TS04097	Q6	1TS04097
1TS01577	Q7	1TS01577
1TS16212	Q8	1TS16212
1TS04097	Q9	1TS04097
1TS15113	Q10	1TS15113
1TS04097	Q11	1TS04097
1TS01577	Q12	1TS01577
1TS04097	Q13	1TS04097
1TS00508	Q14	1TS00508
1TS04097	Q15	1TS04097
1TS04097	Q17	1TS04097
	Q18	
	Q19	
	Q20	
1TS04097	Q21	1TS04097
1RS6A153	R1	15K
	R2	R2
1RS6A152	R3	1.5K
1RS6A010	R4	10
1RS6A152	R5	1.5K
1RS6A222	R6	2.2K
1RS6A101	R7	100
1RS6A082	R8	82
1RS6A010	R9	10
1RS6A010	R10	10
1RS6A022	R11	22
1RS6A472	R12	4.7K
1RS6A472	R13	4.7K
1RS6A472	R14	4.7K
1RS6A181	R15	180
1RS6A056	R16	56
1RS6A473	R17	47K
1RS6A022	R18	22
1RS6A273	R19	27K

**PART LIST**

CIRCUIT : 1PM044C2

COMPUCTOR NO.	REFETENCE	VALUE
1RS6A181	R20	180
1RS6A022	R21	22
1RS6A103	R22	10K
1RS6A101	R23	100
1RS6A010	R25	10
1RS6A472	R26	4.7K
1RS6A104	R27	100K
1RS6A473	R28	47K
	R29	R29
1RS6A022	R30	22
1RS6A682	R31	6.8K
1RS6A471	R32	470
	R33	R33
1RS6A022	R34	22
1RS6A103	R35	10K
1RS6A333	R39	33K
1RS6A105	R40	1M
1RS6A223	R41	22K
1RS6A123	R42	12K
1RS6A047	R43	47
1RS6A101	R44	100
1RS6A101	R45	100
1RS6A101	R46	100
1RS6A473	R49	47K
1RS6A101	R50	100
1RS6A104	R51	100K
1RS6A047	R52	47
1RS6A473	R53	47K
	R54	
1RS6A 183	R55	18K
1RS6A 153	R57	15K
	R58	
	R59	
	R60	
1RS6A563	R61	56K
1RS6A473	R62	47K
1RS6A244	R63	240K
1RS6A102	R67	1K
1RS6A103	R73	10K
1RS6A104	R74	100K
1RS6A333	R75	33K
1RS6A047	R76	47
1RS6A103	R77	10K

ACT7HP01A

COMPUCTOR NO.	REFETENCE	VALUE
1RS6A010	R78	10
1RS6A473	R79	47K
1RS6A153	R83	15K
1RS6A302	R84	3K
1RS6A153	R86	15K
1RS6A153	R88	15K
1RS6A303	R89	30K
1RS6A047	R90	47
1RS6A183	R91	18K
1RS6A272	R92	2.7K
1RS6A393	R93	39K
1RS6A622	R94	6.2K
1RS6A822	R95	8.2K
1RS6A562	R96	5.6K
1RS6A010	R98	10
	R99	*
1RS6A154	R100	150K
1RS6A473	R101	47K
1RS6A103	R102	10K
1RS6A203	R103	20K
1RS6A102	R104	1K
1RS6A103	R105	10K
1RS6A103	R106	10K
1RS6A104	R107	100K
1RS6A822	R108	8.2K
1RS6A106	R110	10M
1RS6A103	R111	10K
1RS6A272	R112	2.7K
1RS6A822	R113	8.2K
1RS6A123	R114	12K
1RS6A047	R115	47
1RS6A393	R116	39K
1RS6A393	R117	39K
1RS6A153	R119	15K
1RS6A152	R121	1.5K
1RS6A472	R122	4.7K
1RS6A474	R123	470K
1RS6A561	R124	560
1RS6A010	R125	10
1RS6A104	R127	100K
1RS6A332	R128	3.3K
	R129	R129
1RS6A104	R130	100K

**PART LIST**

CIRCUIT : 1PM044C2

COMPUCTOR NO.	REFETENCE	VALUE
1RS6A101	R132	100
1RS6A393	R134	39K
1RS6A047	R135	47
1RS6A106	R136	10M
	R141	
	R142	
1RS6A101	R143	100
1RS6A103	R145	10K
1RS6A104	R146	100K
1RS6A105	R147	1M
1RS6A153	R148	15K
1RS6A153	R149	15K
1SWN0003	SW3	POWER S.W.
1IS1503S	U1	1IS1503S
1IR16819	U3	1IR16819
1DLSR008	U4	1DLSR008
1TSUMX5N	U5	1TSUMX5N
1IS02981	U7	1IS02981
1IS23002	U8	1IS23002
1TSIMZ1A	U9	1TSIMZ1A
1IS00284	U10	1IS00284
1IS6368B	U11	1IS6368B
1IS00572	U12	1IS00572
1IS02221	U13	1IS02221
1IS02221	U14	1IS02221
	U15	*
	U16	*
1IS02221	U17	TLV2221
	VC1	VC1
	VC2	VC2
1CVS3U300	VC3	3-30P
1CVSTC010	VC4	3-10P
1RSVB103	VR2	VR10K
1RSVB203	VR3	VR20K
1KM40000	X1	4MHZ
1KM32768	X2	32KHZ

ACT7HP01A

COMPUCTOR NO.	REFETENCE	VALUE
1DVS0229	Z1	V229
1DDS0160	Z3	RB160L-40
1DDS0204	Z4	DA204U
1DDS0204	Z5	204U
1DVS0229	Z6	V229
1DDS0204	Z7	204U
1DDS0204	Z9	DA204U

**PART LIST**ACT7HP01ACIRCUIT : 1PM045C1

COMPUCTOR NO.	REFETENCE	VALUE
1CCS6X104	C1	104P
1SCSD08F	J1	8PIN
1DLM0709+1M LM0019	LCD1	LCD 0709
1RS6A102	R1	1K
1IS1621B	U1	1IS1621B