351

SERVICE MANUAL RC430

REMOTE CONTROL RMC-12

marantz®

model RC430

model RMC-12

Remote Control Receiver

MARANTZ DESIGN AND SERVICE

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Telex: 57589

MARANTZ GERMANY GMBH
Max Planckstrasse, 22
6072 DREIEICH 1
West Germany
Telex: 4185316

MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

MARANTZ DENMARK
Bregnerødvej 132b
3460 Birkerød
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1050 Wien
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Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 OLW
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45 Rue Auguste Van Zande
1080 Brussels
Belgium

MARANTZ SVENSKA A.B.
Svartviksvangen 56
Traneberg - Box 12016
16112 Bromma
Sweden
Telex: 13449

AUSTRALIA

MARANTZ AUSTRALIA PTY., LTD.
32 Cross Street
Brookvale, N.S.W. 2100
Australia
Telex: 24121

U.S.A.

MARANTZ COMPANY, INC.
National Service Dept.
P.O. Box 577
Chatsworth, CA 91311
U.S.A.
Telex: 4720284

CANADA

SUPERSCOPE CANADA, LTD.
3710 Nashua Drive
Mississauga
Ontario, Canada L4V1M5

JAPAN

MARANTZ JAPAN, INC.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan
Telex: 22878

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

NOTE–FOR U.S.A. ONLY

Parts for your MARANTZ stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If, for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from SUPERSCOPE NATIONAL PARTS DEPARTMENT.

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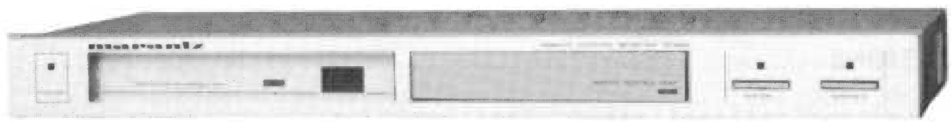
TECHNICAL SPECIFICATIONS

Power Requirement	AC 110–120V/220–240V, 50/60 Hz
Power Consumption	5W
Outlet Rating	System 1, 250W Max. System 2, 250W Max.
Dimensions (W x H x D)	416 x 45 x 192 mm
Weight	1.8 kg

Model RMC-12

Dimensions (W x H x D)	74 x 18 x 152 mm
Weight	95g (without battery)

MODEL RC430 REMOTE CONTROL RECEIVER/RMC-12 REMOTE CONTROL UNIT



MODEL RMC-12

INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz Model RC430 Remote Control.

Servicing information and voltage data included in this manual are intended for use by knowledgeable and experienced personnel only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of circuitry operation.

The parts list furnishes complete ordering information. Most replacement parts should be ordered from the Marantz Company. However, a simple description is included for parts which can be obtained locally.

1. SHOCK, FIRE HAZARD SERVICE TEST

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.

Ref. UL Standard No. 1270. Para. 66. 3. D (Mandatory Test after servicing Electrical Appliances, effective 7-1-83).

2. P.W. BOARDS

As can be seen from the circuit diagram the chassis of Model RC430 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. **Remote Control/ Power Supply .... mounted on P.W. Board PU01**
2. **Power LED .... mounted on P.W. Board PZ01**
3. **LED Switch .... mounted on P.W. Board PY01**
4. **Remote Output Jack ... mounted on P.W. Board PW01**
5. **AU Contact Dual ..... mounted on P.W. Board PT00 (RMC-12)**

3. MARANTZ BUS SYSTEM

The digital control system is upgraded to permit easy operation of functions, components in efficient configuration without any misoperation.

- **MARANTZ Bus System**

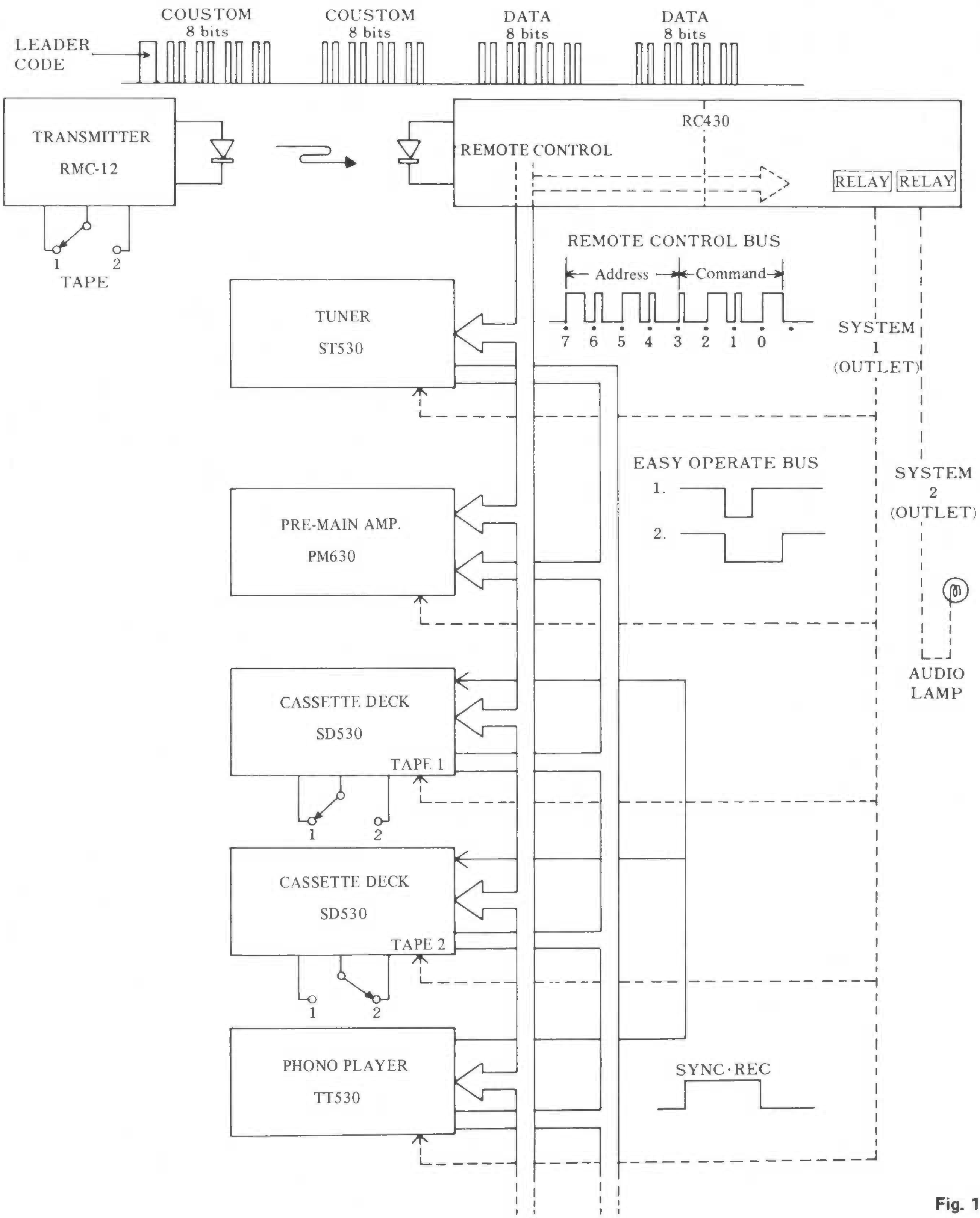


Fig. 1

Fig. 1 shows the signal system between components where the MARANTZ bus system is mounted.

4. TRANSMITTER (RMC-12)

Pulse codes of 32 bits are transmitted using an infrared ray for a carrier. The misoperation-free C-MOS LSI μPD6102G (QT05), operated with minimal battery power consumption, is employed for pulse codes.

- Key inputs of each function are as shown in Table 1 Key Allocation.

- **Key Allocation in μPD6102G**

CCS	0 or 1	0	0	0	1	1	0	1	
IN \ OUT	K00	K01	K02	K03	K04	K05	K06	K07	
	TUNER				DECK				
K10	AM	2	6	DOWN (TUNING)	INDEX SCAN	PAUSE			Double Key-in
K11	FM	3	7		REW	PLAY/ RPT	DIRECTION		Double Key-in
K12		4	8		FF	REC	Q.M.S.	POWER SYSTEM 1	Double Key-in
K13	1	5	UP (TUNING)	MEMORY	STOP/C	REC MUTE		SYSTEM 2	
	PRE-MAIN AMP.						PHONO/CD		
K14	UP (VOL)	LOW (FILTER)					CUT		
K15	DOWN (VOL)			TUNER	MUTE	PLAY	CUE	REPEAT	
K16	LOUDNESS	TAPE 1/ VIDEO (MONITOR)			TAPE 2/ GEQ (MONITOR)				
K17	HIGH (FILTER)		BALANCE	PHONO	CD/AUX				

Table 1

- The pulse position modulation system (PPM) is introduced as shown in Fig. 2 for remote-control infrared-ray output waveforms to discriminate 1 from 0 with a duration between pulses.

Each of custom codes and data codes consists of 8 bits. Inverted codes are also transmitted in the system to minimize misoperation.

- **Remote Output Waveform**

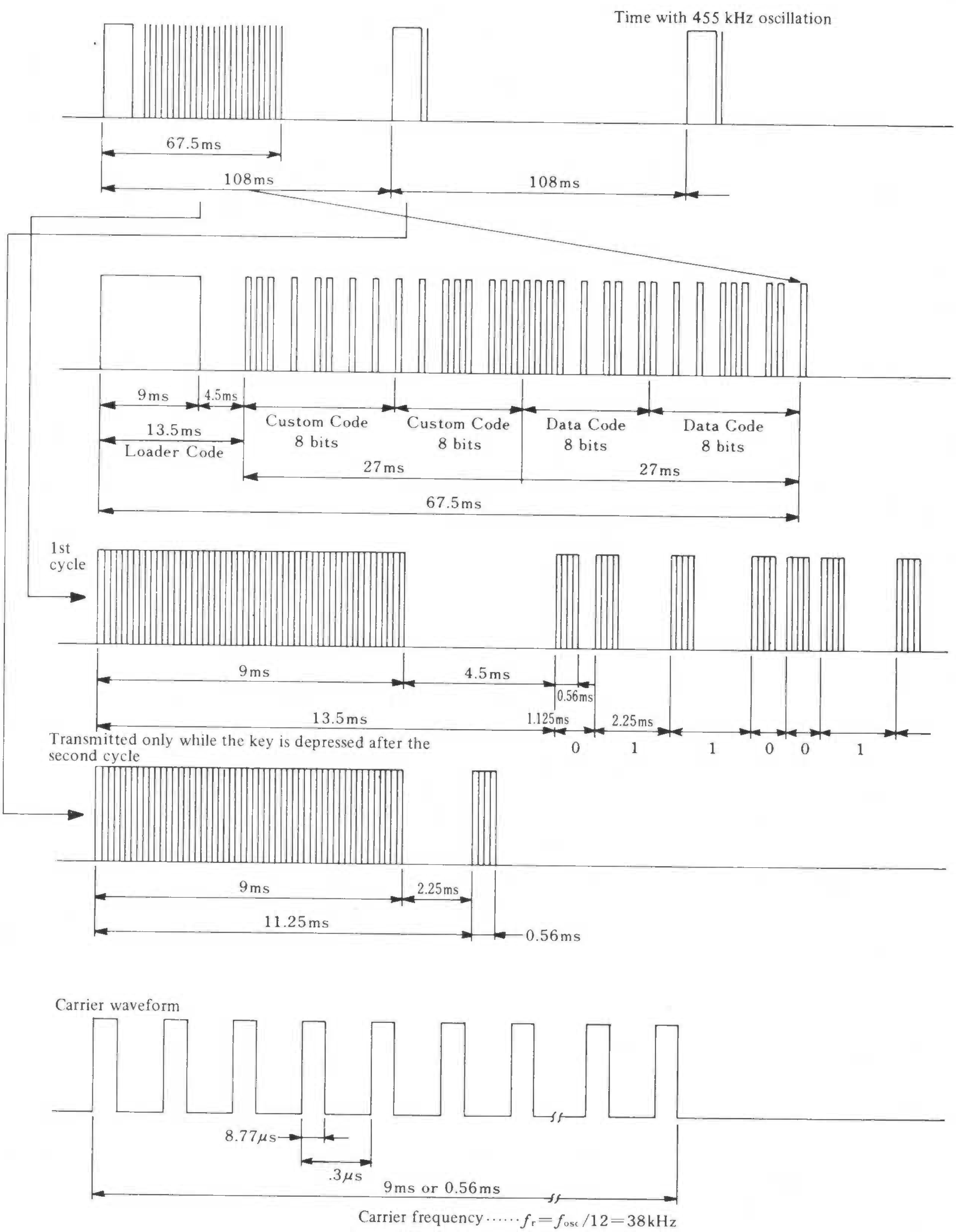
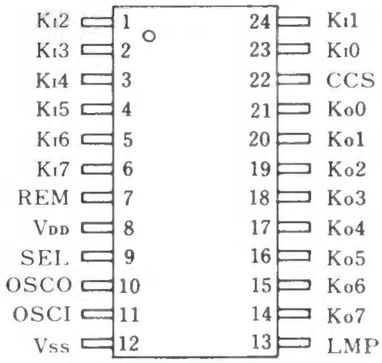


Fig. 2

5. C-MOS LSI μPD6102G (QT05) FOR REMOTE CONTROL

- **Pin Connection** (Top View)



1. K_I2 ············ Key Input 2
2. K_I3 ············ Key Input 3
3. K_I4 ············ Key Input 4
4. K_I5 ············ Key Input 5
5. K_I6 ············ Key Input 6
6. K_I7 ············ Key Input 7
7. REM ········· Remote Output
8. V_{DD} ············ Power terminal
9. SEL ·········· 64/128 Data Select
10. OSCO ········ Oscillator Output
11. OSCI ········· Oscillator Input
12. Vss
13. LMP ········ Lamp Output
14. Ko7 ·········· Key Output 7
15. Ko6 ·········· Key Output 6
16. Ko5 ·········· Key Output 5
17. Ko4 ·········· Key Output 4
18. Ko3 ·········· Key Output 3
19. Ko2 ·········· Key Output 2
20. Ko1 ·········· Key Output 1
21. Ko0 ·········· Key Output 0
22. CCS ········· Custom Code Select Input
23. K_I0 ············ Key Input 0
24. K_I1 ············ Key Input 1

- **Absolute Max. Ratings** (Ta = 25°C)

Item	Symbol	Limite	Unit
Supply voltage	$V_{DD} - V_{SS}$	4.0	V
Input voltage	$V_{IN} - V_{SS}$	−0.3 ~ V_{DD}	V
Output voltage	I_{OH} (REM, LMP)	−15.0	mA
Power dissipation	Pd	250	mW
Operating temperature	Topt	−20 ~ +75	°C
Retention temperature	T_{stg}	−40 ~ +125	°C

- **Recommended Operating Range**

Item	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V_{DD}	2.0	3.0	3.3	V
Oscillation frequency	f_{OSC}	400	455	500	kHz
Indicator lamp output current	I_{OL} (LMP)		1		mA

- **Electrical Characteristics** (Ta = 25°C, V_{DD} = 3.0V)

Item	Symbol	Measuring Condition	Min.	Typ.	Max.	Unit
Supply current	I_{DD} (OP)	f_{OSC} = 455 kHz		0.1	1.0	mA
Supply current	I_{DD} (ST)	f_{OSC} = STOP			1	μA
High-level input voltage	V_{IH} (KI)		0.7V_{DD}		V_{DD}	V
Low-level input voltage	V_{IL} (KI)		0		0.3V_{DD}	V
Input pull-down resistance	R (KI)		150	300	600	kΩ
Output voltage	I_{OH} (REM)	V_{OH} (REM) = 1.5V	−5	−13		mA
Low-level output voltage	V_{OL} (LMP)	I_{OL} = 1.0 mA		0.17	0.3	V

A custom code is determined as shown in Fig. 3 by diodes DT01 to DT04.

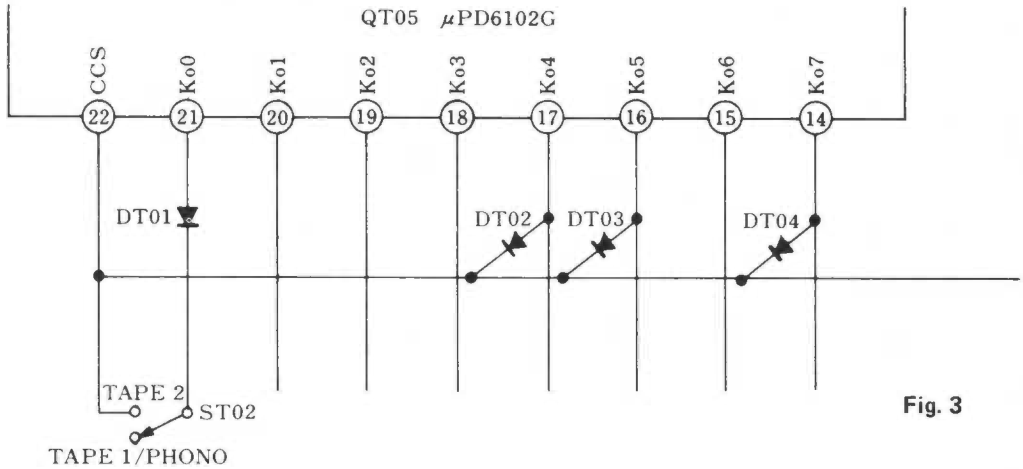


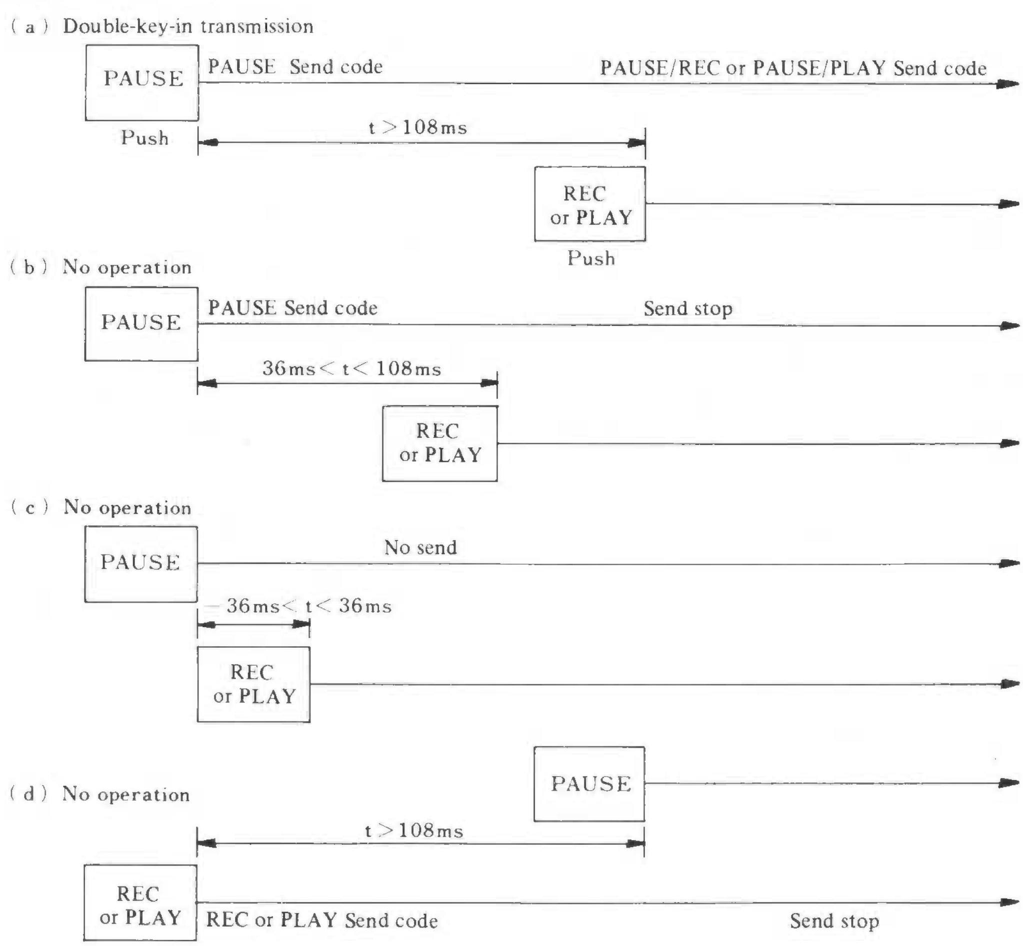
Fig. 3

The ST02 is used to control two decks (SD530) by switching a custom code with the on/off actions of the ST02. The TAPE 1 and PHONO functions are operated in the off state. (In that case, either selected by the TAPE 1 – TAPE 2 selector switch on the rear panel of the Deck (SD530) is operable.)

- **Double-key-in Operation**

The double-key-in block circuit is provided in all keys to prevent double transmission of the same or different code. When the PAUSE and PLAY keys or the PAUSE and REC keys are depressed, a special data code is offered to effectively perform control of functions in the Deck (SD530). Priority is given to key-in. This mode is set only when PLAY or REC is keyed in 108 ms after depression of PAUSE. The order of releasing the two keys does not concern the mode.

- **Double-key-in Operation Timing**



6. RC430 SYSTEM CONFIGURATION

The transmitted infrared ray is detected by photo-diode PH302 (QU14) behind the light detecting inlet and then led to the next preamplifier IC μPC1373H (QU13). The IC amplifier, used only for the infrared ray, detects and amplifies a weak signal from the photo-diode to a logic level. The IC is therefore shielded since it tends to be affected by external noise. The detected output is decoded to a pulse width modulation signal (PWM) of 8 bits, and sent out from jack JW01 (RCA pin jack) on the rear panel to each component.
The signal is also sent to microcomputer μCOM43 (QT09) for the timer to drive the power switch control relays in the systems 1 and 2.

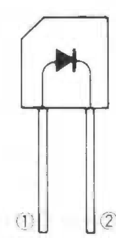
7. PHOTO-DIODE PH302 (QU14)

The photo-diode is used only for remote control. It has a large photo-detecting area and allows a high-speed response. It matches the infrared-ray LED in maximum sensitivity wavelength, which is approx. 940 mm.

- **Absolute Maximum Ratings** (Ta = 25°C)

Item	Symbol	Limit	Unit
inverse voltage	V_R	32	V
Power dissipation	P_D	150	mW
Junction temperature	T_j	80	°C
Retention temperature	T_{stg}	−40 to +80	°C

- **Connection Diagram**



- **Electrical Characteristics** (Ta = 25°C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Dark current	I_R	V_R = 10V			30	nA
Max. sensitivity wavelength	$\lambda max.$			940		nm
Quantum efficiency	η	λ = 940 nm		0.88		
Sensitivity	S	V_R = 5V	35	50		nA/lx
Energetic sensitivity	S	λ = 940 nm		0.6		A/W
Voltage under no load	V_L	E_V = 100 lx		285		mV
Voltage under no load	V_L	E_V = 1000 lx		365		mV
Rise time	t_r, t_f	R_L = 1 kΩ, V_R = 0, λ = 940 nm		125		ns
Fall time	t_r, t_f	R_L = 1 kΩ, V_R = 5V, λ = 940 nm		50		ns
Inter-pin capacitance	Ct	V_R = 5V, f = 1 MHz		14		pF
Photo-detecting area	A			9		mm^2
Equivalent noise wattage	NEP	V_R = 10V		4.2×10^{-14}		$W/\sqrt{Hz}$
Detecting limit	D			6.6×10^{-12}		$cm\sqrt{Hz}/W$

8. PREAMPLIFIER IC μPC1373H (QU13)

The IC is a receive-only preamplifier in the infrared-ray remote-control system. High-gain amplifier, peak detector and output shaping circuits required for a receiving preamplifier are built in one chip.

- **Absolute Maximum Ratings** (Ta = 25°C)

Item	Symbol	Limit	Unit
Supply voltage	$V_{DD} - V_{SS}$	15.0	V
Power dissipation	P_d	270	mW
Operating temperature	T_{opt}	−20 ~ +75	°C
Retention temperature	T_{stg}	−40 ~ +125	°C

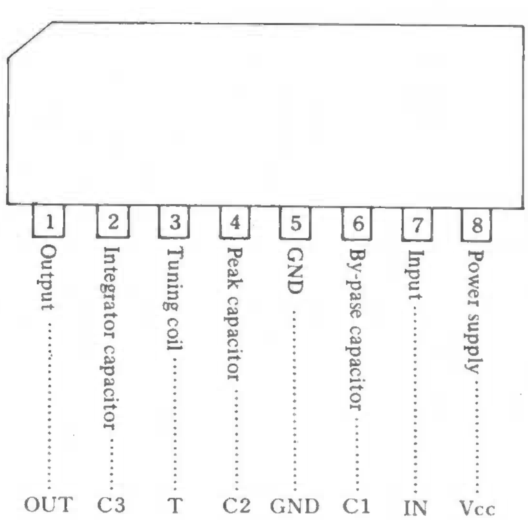
- **Recommended Operating Conditions**

Item	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V_{DD}	6.0	8.5	14.4	V
Frequency	f_{OSC}	30		50	kHz

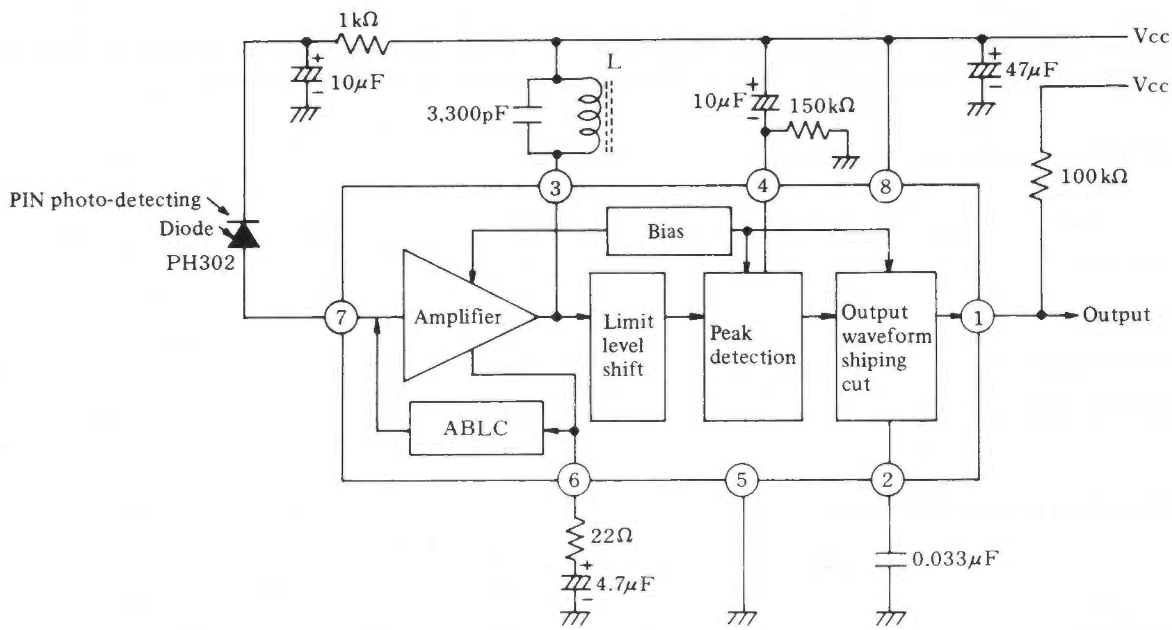
- **Electrical Characteristics** (Ta = 25°C, V_{CC} = 8.5V, f_{in} = 40 kHz)

Item	Symbol	Measuring Condition	Min.	Typ.	Max.	Unit
Supply current	I_{CC}		1.5	2.5	3.5	mA
Input terminal voltage	V_{in} 1		2.1	2.6	3.1	V
Input terminal voltage	V_{in} 2	I_{in} = 70 μA	3.4	4.1	4.9	V
First stage voltage gain	A_{vL}	#7 − #3, v_{out} = 500 mVp-p		60		dB
Detecting sensitivity	v_{in}			50	100	μV
Internal input resistance	r_{in}		40	60	80	kΩ
Output voltage	V_{OL}	I_{OL} = 0.1 mA, v_{in} = 1 mVp-p			0.5	V
Putput leak current	I_{OH}	V_{OH} = 14.4V			2	μA

- **Connection Diagram**



• **Example of Basic Circuit**



9. FUNCTION OF EACH TERMINAL

Pin (7), input terminal
Internal impedance is approx. 60 kΩ. It is connected directly to photo-diode QU14. The automatic bias level control (ABLC) circuit is inserted into the input stage to prevent the input terminal from saturation due to external light. If the input terminal is exposed to intensive external light, the circuit operates to clamp the bias level of the input terminal.

Pin (4), peak capacitor (CU22) and peak detecting sensitivity resistor (RU36)
The pin detects a waveform of the tuning coil in accordance with a peak of signal to input through the peak detector circuit.
For that reason, noise-free signal is detected during receiving since the detecting level is in the highest sensitivity in the quiescent state and varies with an input level. The time constant of peak hold can be changed with a value of CU22. Peak detecting sensitivity is determined with a value of RU36.

Pin (3), tuning coil (LU03)
Tuned with a carrier sent from the transmitter by adjusting LU03. A carrier frequency of the transmitter RMC-12 is 37.5 kHz.

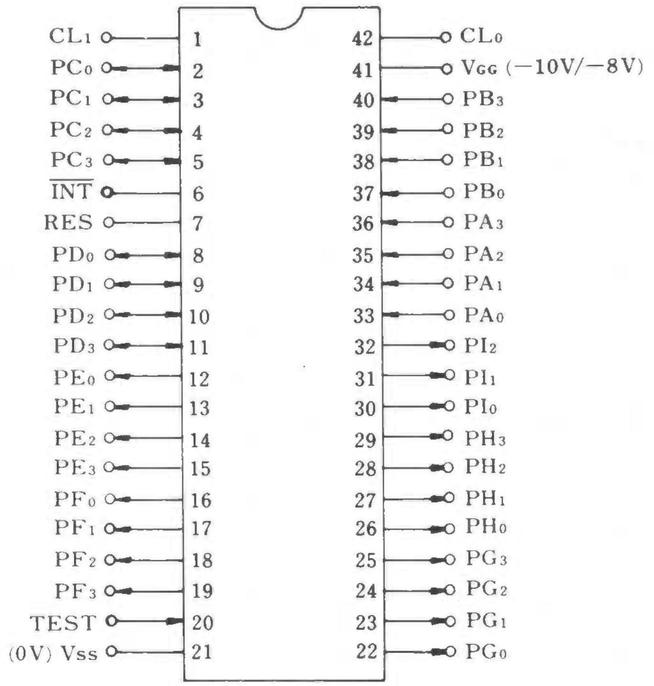
Pin (2), integration capacitor (CU21)
A carrier waveform after peak detection is integrated in the capacitor. The reset time constant is determined by this capacitor and external resistor RU37 of pin (1), output terminal.

10. MICROCOMPUTER QU12

One-chip 4-bit microcomputer. It is a P-channel, 42-pin MOS prastic dip type. It is a key station on which the MARANTZ bus system depends, and is a MARANTZ's original product.

Pin (33) is an input terminal that receives output of preamplifier QU13.
Pin (12) is an output terminal of a remote control bus and has the high level with signal received.
Pin (13) is an eye indicator output terminal and has the high level with signal received. However, the pin is set to the high level at a moment in PAUSE mode.
Pin (7) is a reset terminal in the on state of power supply. It is driven by QU05. QU12 is reset with change from high to low level. Therefore, rising and falling time constants of QU12 on 10V and those of the collector in the QU05 on power supply must be appropriately selected to allow exact operation in any mode when the ac plug of the timer is inserted into the receptacle.
On DC power supply of the QU05, the time constants are determined by the RU02 and the CU03, so that a value being as small as 0.1 μF is selected for the CU13.
A time constant that turns on the QU05 is determined by the RU16 (560 kΩ) and the CU07 (10 μF), and is larger than the time constant on 10V. The CU07 is discharged by diode DU10 with the AC plug disconnected (or in power failure).

• **Pin Connection Pattern** (Top View)



• **Pin Name**

$CL_{0,1}$: Clock signal oscillation, external
$\overline{INT}$: Interrupt
RES : Reset
$PA_{3\sim0}$: Input port $A_{3\sim0}$
$PB_{3\sim0}$: Input port $B_{3\sim0}$
$PC_{3\sim0}$: I/O port $C_{3\sim0}$
$PD_{3\sim0}$: I/O port $D_{3\sim0}$
$PE_{3\sim0}$: Output port $E_{3\sim0}$
$PF_{3\sim0}$: Output port $F_{3\sim0}$
$PG_{3\sim0}$: Output port $G_{3\sim0}$
$PH_{3\sim0}$: Output port $H_{3\sim0}$
$PI_{2\sim0}$: Output port $I_{2\sim0}$
TEST : Test

11. SIGNAL PROCESSING OF MARANTZ BUS SYSTEM

This system features to permit control of every type of component through a single cable, help easy upgrade of the system and multiplex the control function. A code corresponds to each component and its function. The waveform can be directly observed on the storage oscilloscope. An address of 4 bits specifies each component while a command of 4 bits determines the function of the component.

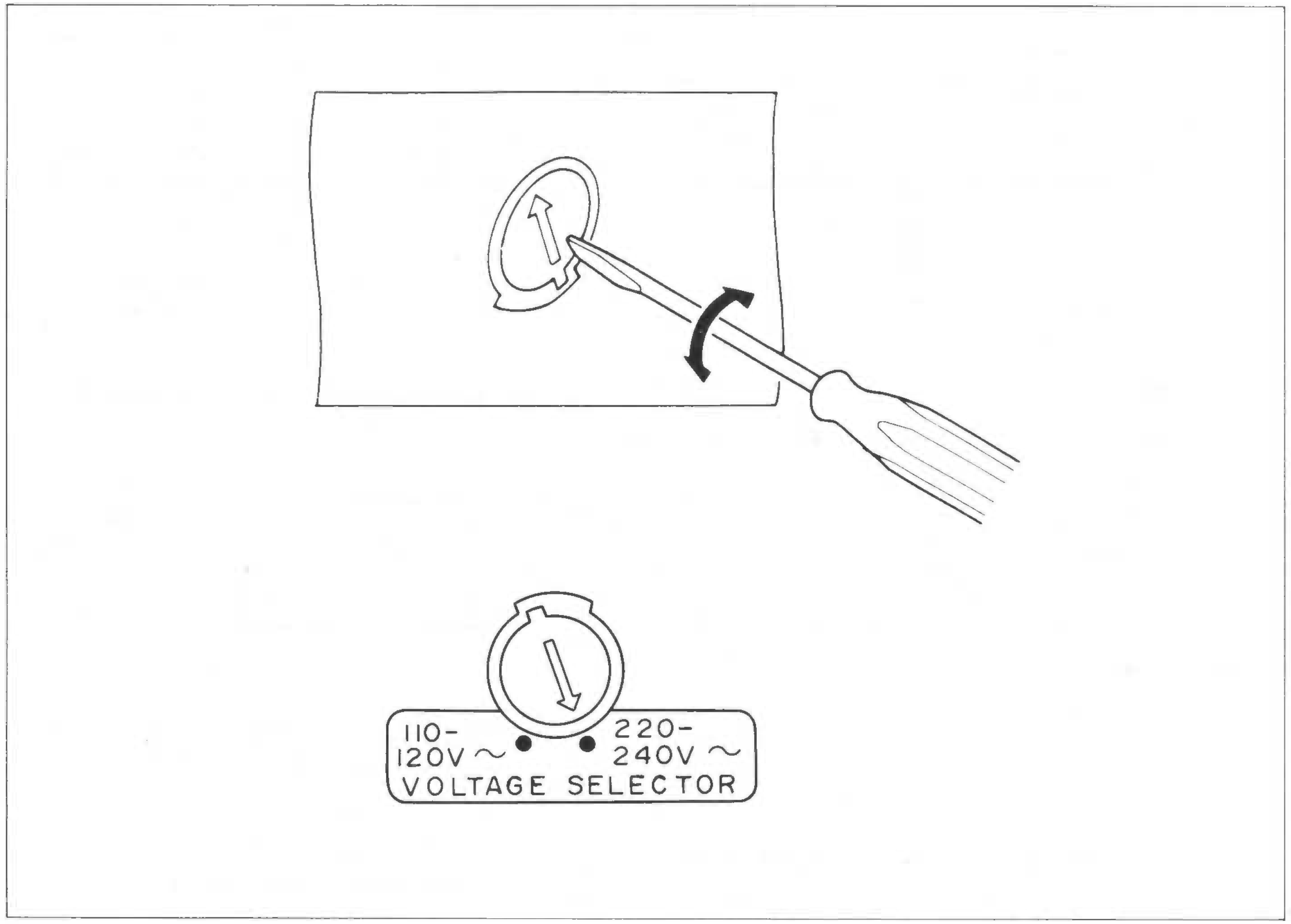
12. VOLTAGE CONVERSION

• **EUROPEAN MODEL ONLY**

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

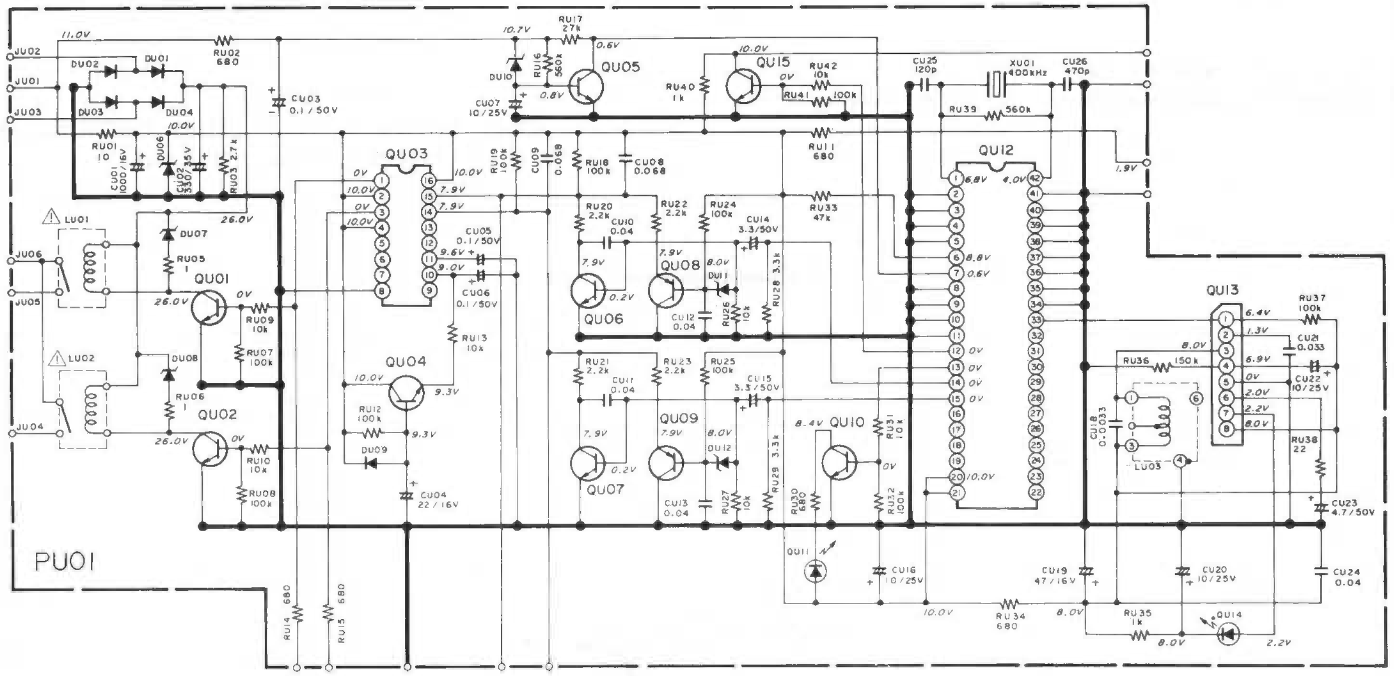
Voltage Conversion Chart

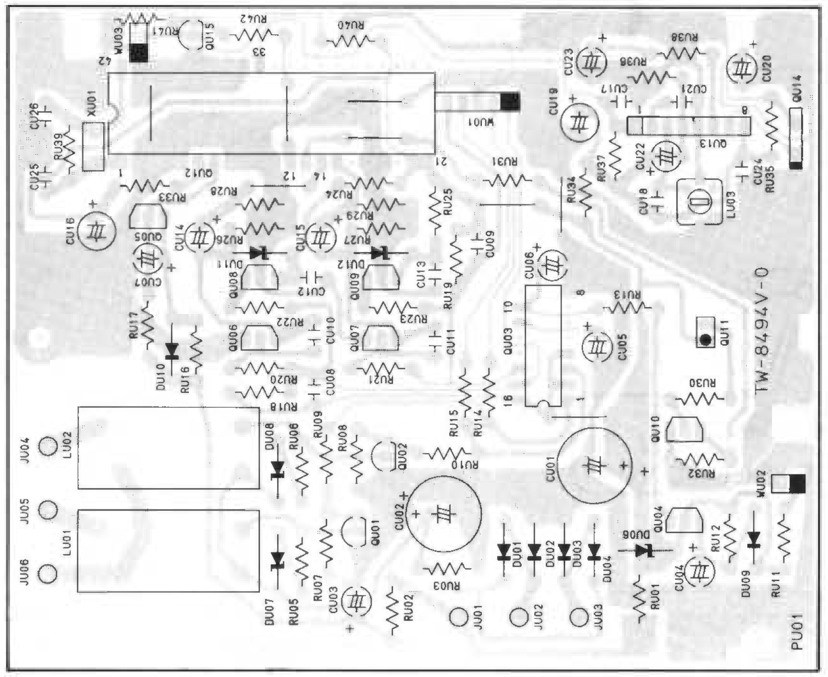


Note on safety: Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

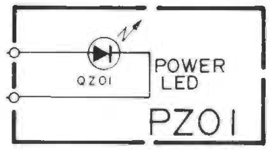
13. DIAGRAM AND COMPONENT LOCATIONS

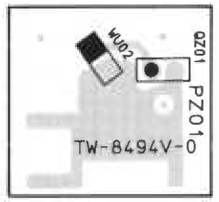
13.1 Power Control/Power Switch (PU01) Schematic Diagram and Component Locations



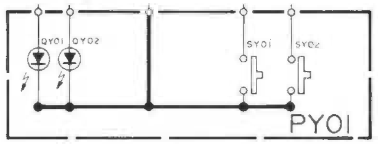


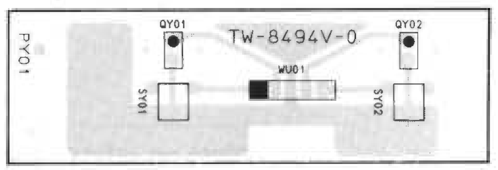
13.2 LED (PZ01) Schematic Diagram and Component Locations



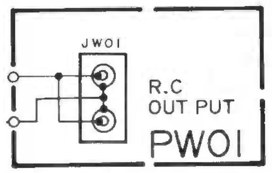


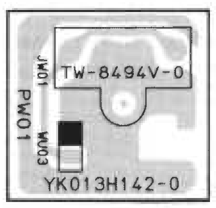
13.3 LED Switch (PY01) Schematic Diagram and Component Locations



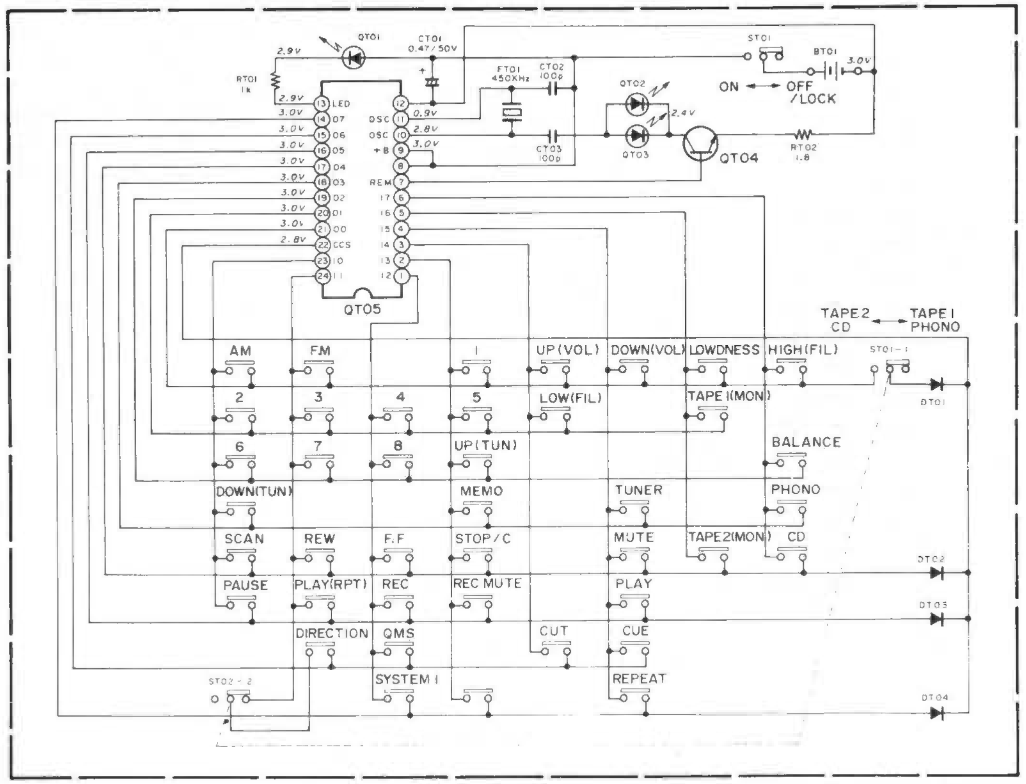


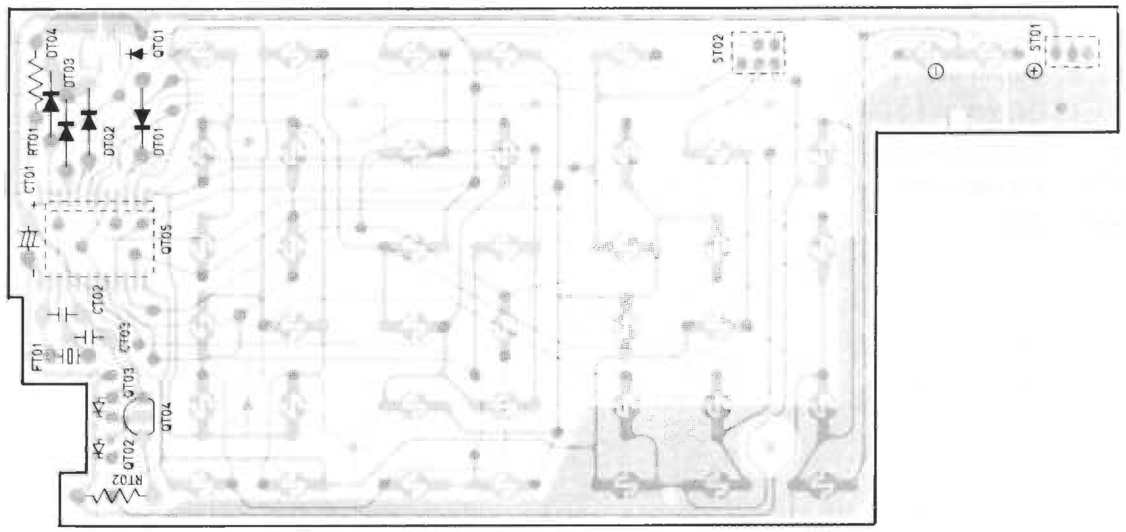
13.4 Remote Output Jack (PW01) Schematic Diagram and Component Locations





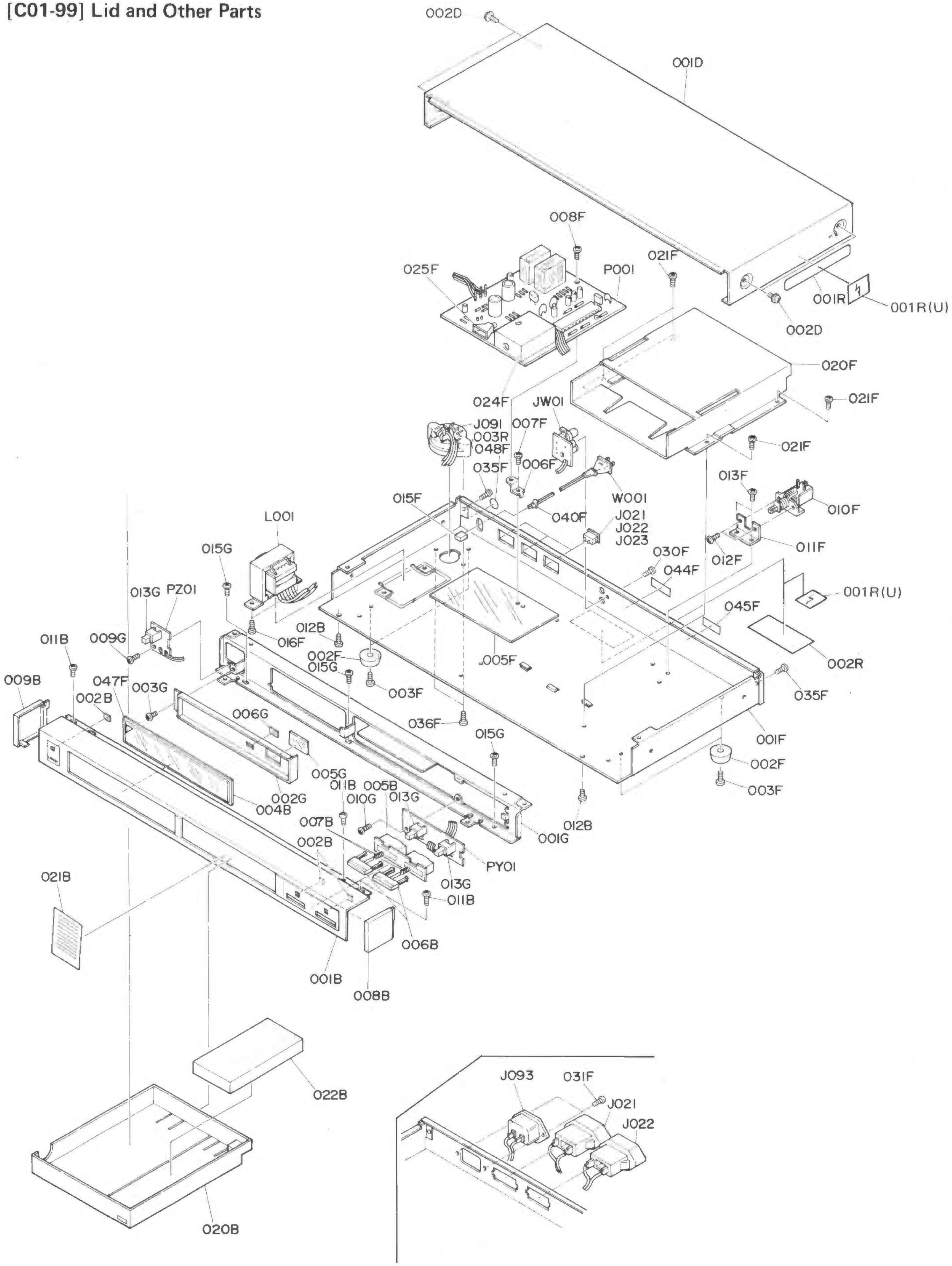
14. REMOTE CONTROL (RMC-12) SCHEMATIC DIAGRAM AND COMPONENT LOCATION





15. EXPLODED VIEW AND PARTS LIST

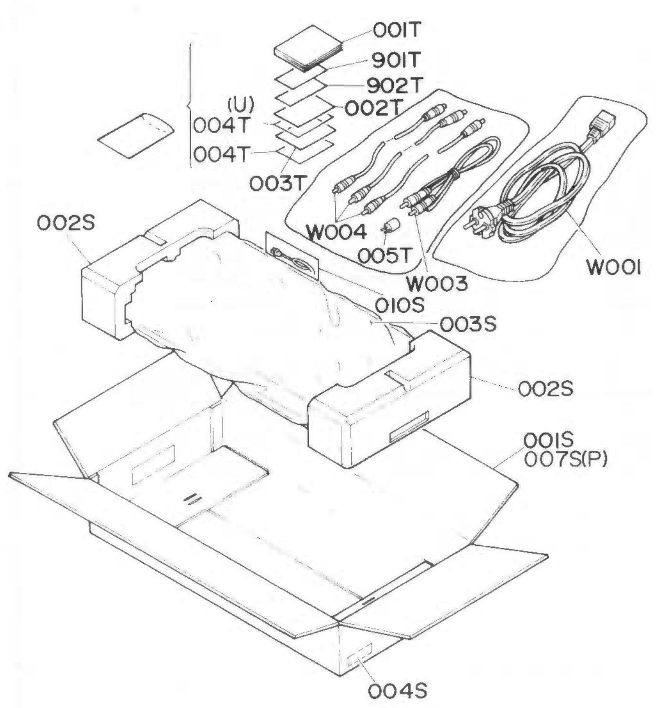
[C01-99] Lid and Other Parts

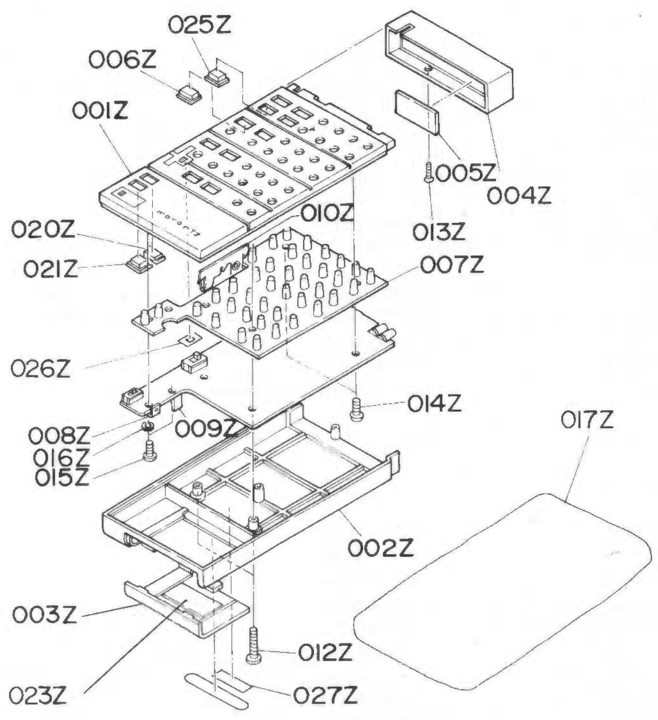


REF. DESIG.	Q'TY U	Q'TY N	Q'TY A	Q'TY P	PART NO.	DESCRIPTION
A	1	1	1	1	013H063400	Front Panel Assembly
001B	1	1	1	1	013H063010	Escutcheon, Front Panel
002B	3	3	3	3	125H158010	Window, L.E.D.
004B	1	1	1	1	013H158010	Window, Operation
005B	1	1	1	1	013H259010	Bushing, System 1/2
006B	2	2	2	2	431H154010	Knob, System 1/2
007B	2	2	2	2	132T115010	Spring, Knob
008B	1	1	1	1	013H067010	Cap, Right
009B	1	1	1	1	013H067020	Cap, Left
011B	2	2	2	2	51280308B0	B.H. Tapped Screw B3x8
012B	2	2	2	2	51280308B0	B.H. Tapped Screw B3x8
020B	1	1	1	1	013H064010	Case
021B	1	1	1	1	013H861010	Label
022B	1	1	1	1	013H277010	Packing
001D	1	1	1	1	431H257010	Lid, Top Cover Gold
002D		4	4	4	51706009U0	Spec. Set Screw
002D	4				51706009Z0	Spec. Set Screw
001F		1	1		013H105010	Chassis, Main
001F				1	013H105040	Chassis, Main
001F	1				013H105030	Chassis, Main
002F	4	4	4	4	415H057010	Leg
003F	4	4	4	4	51280408B0	B.H. Tapped Screw B4x8
005F		1	1		013H120010	Insulator, Main PWB
006F	1	1	1	1	013H160030	Bracket, Main PWB
007F	1	1	1	1	51570306B0	P. Tapped Screw P3x6
008F	1	1	1	1	51280308B0	B.H. Tapped Screw B3x6
010F	1	1	1	1	SP01010490	Push Switch
011F	1	1	1	1	013H160020	Bracket, Open SW
012F	2	2	2	2	51100305A9	B.H.M. Screw B3x5
013F	2	2	2	2	51570306B0	P. Tapped Screw P3x6
015F	1				403H056010	Buffer, AC Cord
016F	2	2	2	2	51280308B0	B.H. Tapped Screw B3x8
020F	1	1	1	1	013H064020	Case
021F	4	4	4	4	51570306B0	P. Tapped Screw P3x6
024F	1	1	1	1	013H109010	Shield, Main PWB
025F	1	1	1	1	013H274010	Reflector, LED
030F	1	1	1	1	51280308B0	B.H. Tapped Screw B3x8
031F		2	2		51500308B0	F.H. Tapped Screw F3x8
035F	2	2	2	2	51280308B0	B.H. Tapped Screw B3x8
036F		2	2	2	51280308B0	B.H. Tapped Screw B3x8
040F	1			1	1455259090	Bushing AC Cord
044F		1	1		4581861010	Label Made in Japan
045F	1	1	1	1	2112265010	Indicator Serial No. Label
047F	1				105H861010	Label 3 Year
048F	1				2457861040	Label CSA Canada
001G	1	1	1	1	013H160010	Bracket, Front Chassis
002G	1	1	1	1	013H063020	Escutcheon, Operation
003G	1	1	1	1	51280308B0	B.H. Tapped Screw B3x8
005G	1	1	1	1	013H158020	Window, Operation
006G	1	1	1	1	013H158030	Window, L.E.D.
009G	1	1	1	1	51280308B0	B.H. Tapped Screw B3x8
010G	1	1	1	1	51280308B0	B.H. Tapped Screw B3x8
013G	3	3	3	3	431H051020	Guide, L.E.D.
015G	3	3	3	3	51570306B0	P. Tapped Screw B3x6

REF. DESIG.	Q'TY U	Q'TY N	Q'TY A	Q'TY P	PART NO.	DESCRIPTION
001R		1	1	1	2911861020	Label
001R	2				117H861010	Label
002R		1	1	1	2911861110	Label
003R	1				9511101070	Label UL
⚠ J021		1	1		YJ04000850	Jack, Outlet
⚠ J021	1			1	YJ04000990	Jack, Outlet
⚠ J022		1	1		YJ04000850	Jack, Outlet
⚠ J022	1			1	YJ04000990	Jack, Outlet
⚠ J023	1			1	YJ04000990	Jack, Outlet
⚠ J091		1	1	1	BY05060060	Volt, Selector
⚠ J093		1	1		YP04000610	Plug
⚠ L001		1	1	1	TS14132180	Power Transformer
⚠ L001	1				TS14132170	Power Transformer
⚠ W001				1	YC01800200	A.C. Power Cord
⚠ W001	1				YC01800260	A.C. Power Cord

[H01-99] Packing Materials





REF. DESIG.	Q'TY U	N	A	P	PART NO.	DESCRIPTION
						PACKING
001S		1	1		013H801020	Packing Case
001S	1				013H801010	Packing Case
002S	2	2	2	2	431H809010	Cushion
003S	1	1	1	1	9090808030	Polyethy Sheet
004S			4		9526019030	Serial No. Card
004S		4			9526019060	Serial No. Card
004S				4	9526019050	Serial No. Card
004S	4				9526019010	Serial No. Card
007S				1	013H801050	Packing Case
010S	1			1	2918107390	Sheet, AC Cord
001T		1	1	1	013H851310	Instructions
001T	1				013H851210	Instructions
002T		1	1	1	013H851320	Instructions, Spec.
002T	1				013H851220	Instructions, Spec.
003T			1		9631000090	Guarantee Card
003T				1	416H854010	Guarantee Card
003T	1				103H854010	Guarantee Card
004T				1	3435851210	Instructions
004T	1				2225813010	Envelope Sheet
005T				1	YJ04000240	Jack
901T	1				2818854040	Guarantee Card (Canada)
902T	1				9650000050	S. Station Card (Canada)
W001			1		ZC02006030	A.C. Power Cord
W001		1			ZC01805030	A.C. Power Cord
W003	1	1	1	1	ZD01000250	Connective Cord
W004	3	3	3	3	ZD00400080	Connective Cord

REF. DESIG.	Q'TY U	N	A	P	PART NO.	DESCRIPTION
						RMC-12 REMOTE CONTROL UNIT
001Z	1	1	1	1	025H064010	Case, Front
002Z	1	1	1	1	017H064020	Case, Bottom
003Z	1	1	1	1	017H064030	Case, Batt.
004Z	1	1	1	1	017H401010	Frame, Front
005Z	1	1	1	1	017H158020	Window, L.E.D. Lens
006Z	6	6	6	6	017H270010	Button Push
007Z	1	1	1	1	025H127010	Control Board
008Z	1	1	1	1	017H123010	Contactor, Batt. Terminal (—)
009Z	1	1	1	1	017H123020	Contactor, Batt. Terminal (+)
010Z	1	1	1	1	017H123030	Contactor, Batt. Terminal (+ —)
012Z	2	2	2	2	51402615R0	B.H. Tapped Screw B2.6x15
013Z	1	1	1	1	51420206R0	O.C.H. Tapped Screw B2x6
014Z	2	2	2	2	51302606B0	P.H. Tapped Screw P2.6x6
015Z	2	2	2	2	51302606B0	P.H. Tapped Screw P2.6x6
016Z	2	2	2	2	54042602N0	Spring Washer
017Z	1	1	1	1	9011325010	Polyethy Bag
020Z	1	1	1	1	017H270020	Button System 1
021Z	1	1	1	1	017H270030	Button System 2
023Z	1	1	1	1	4724056010	Buffer, Batt. Lid
025Z	4	4	4	4	017H270040	Button Up/Down
026Z	1	1	1	1	025H303010	Mask
027Z	1	1	1	1	4581861010	Label

16. ELECTRICAL PARTS LIST

REF. DESIG.	Q'TY U	N	A	P	PART NO.	DESCRIPTION
						PU01-REMOTE DECODER & POWER SUPPLY
PU01	1	1	1	1	YK013H1410	P.W. Board, Remote Decoder & Power Supply
	1			1	ZZ013H1410	P.W. Board Assembly
		1	1		ZZ013H8410	P.W. Board Assembly
						PU01-CAPACITORS
CU01	1	1	1	1	EA10801630	Elect 1000μF 16V
CU02	1	1	1	1	EA33703530	Elect 330μF 35V
CU03	1	1	1	1	EA10405030	Elect 0.1μF 50V
CU04	1	1	1	1	EA22601630	Elect 22μF 16V
CU05	1	1	1	1	EA10405030	Elect 0.1μF 50V
CU06	1	1	1	1	EA10405030	Elect 0.1μF 50V
CU07	1	1	1	1	EA10602530	Elect 10μF 25V
CU08	1	1	1	1	DF16683310	Film 0.068μF ±10%
CU09	1	1	1	1	DF16683310	Film 0.068μF ±10%
CU10	1	1	1	1	DK18403320	Ceramic 0.04μF +80% −20%
CU11	1	1	1	1	DK18403320	Ceramic 0.04μF +80% −20%
CU12	1	1	1	1	DK18403320	Ceramic 0.04μF +80% −20%
CU13	1	1	1	1	DK18403320	Ceramic 0.04μF +80% −20%
CU14	1	1	1	1	EA33505030	Elect 3.3μF 50V
CU15	1	1	1	1	EA33505030	Elect 3.3μF 50V
CU16	1	1	1	1	EA10602530	Elect 10μF 25V
CU17	1	1	1	1	DK16102300	Ceramic 0.001μF ±10%
CU18	1	1	1	1	DF15332310	Film 0.0033μF ±5%
CU19	1	1	1	1	EA47601630	Elect 47μF 16V
CU20	1	1	1	1	EA10602530	Elect 10μF 25V
CU21	1	1	1	1	DF16333310	Film 0.033μF ±10%
CU22	1	1	1	1	EA10602530	Elect 10μF 25V
CU23	1	1	1	1	EA47505030	Elect 4.7μF 50V
CU24	1	1	1	1	DK18403320	Ceramic 0.04μF +80% −20%
CU25	1	1	1	1	DD15121370	Ceramic 120pF ±5%
CU26	1	1	1	1	DD15471370	Ceramic 470pF ±5%
						PU01-RESISTORS (All Resistors are ±5% & 1/4W)
RU01	1	1	1	1	NF02100140	10Ω, Fuseable
RU02	1	1	1	1	GD05681140	680Ω
RU03	1	1	1	1	GD05272140	2.7kΩ
RU05	1	1	1	1	GD05010140	1Ω
RU06	1	1	1	1	GD05010140	1Ω
RU07	1	1	1	1	GD05104140	100kΩ
RU08	1	1	1	1	GD05104140	100kΩ
RU09	1	1	1	1	GD05103140	10kΩ
RU10	1	1	1	1	GD05103140	10kΩ
RU11	1	1	1	1	GD05681140	680Ω
RU12	1	1	1	1	GD05104140	100kΩ
RU13	1	1	1	1	GD05103140	10kΩ
RU14	1	1	1	1	GD05681140	680Ω
RU15	1	1	1	1	GD05681140	680Ω
RU16	1	1	1	1	GD05564140	560kΩ
RU17	1	1	1	1	GD05273140	27kΩ
RU18	1	1	1	1	GD05104140	100kΩ
RU19	1	1	1	1	GD05104140	100kΩ
RU20	1	1	1	1	GD05222140	2.2kΩ

REF. DESIG.	Q'TY U	N	A	P	PART NO.	DESCRIPTION
RU21	1	1	1	1	GD05222140	2.2kΩ
RU22	1	1	1	1	GD05222140	2.2kΩ
RU23	1	1	1	1	GD05222140	2.2kΩ
RU24	1	1	1	1	GD05104140	100kΩ
RU25	1	1	1	1	GD05104140	100kΩ
RU26	1	1	1	1	GD05103140	10kΩ
RU27	1	1	1	1	GD05103140	10kΩ
RU28	1	1	1	1	GD05332140	3.3kΩ
RU29	1	1	1	1	GD05332140	3.3kΩ
RU30	1	1	1	1	GD05681140	680Ω
RU31	1	1	1	1	GD05103140	10kΩ
RU32	1	1	1	1	GD05104140	100kΩ
RU33	1	1	1	1	GD05473140	47kΩ
RU34	1	1	1	1	GD05681140	680Ω
RU35	1	1	1	1	GD05102140	1kΩ
RU36	1	1	1	1	GD05154140	150kΩ
RU37	1	1	1	1	GD05104140	100kΩ
RU38	1	1	1	1	GD05220140	22Ω
RU39	1	1	1	1	GD05564140	560kΩ
RU40	1	1	1	1	GD05102140	1kΩ
RU41	1	1	1	1	GD05104140	100kΩ
RU42	1	1	1	1	GD05103140	10kΩ
						PU01-SEMICONDUCTORS
DU01	1	1	1	1	HD20022030	Diode DSF10C
DU02	1	1	1	1	HD20022030	Diode DSF10C
DU03	1	1	1	1	HD20022030	Diode DSF10C
DU04	1	1	1	1	HD20022030	Diode DSF10C
DU06	1	1	1	1	HD30025020	Zener MA2100B
DU07	1	1	1	1	HD30015020	Zener MA1240M
DU08	1	1	1	1	HD30015020	Zener MA1240M
DU09	1	1	1	1	HD20001000	Diode IS1555
DU10	1	1	1	1	HD20001000	Diode IS1555
DU11	1	1	1	1	HD30007020	Zener MA1091M
DU12	1	1	1	1	HD30007020	Zener MA1091M
QU01	1	1	1	1	HT313181R0	Transistor 2SC1318(R)
QU02	1	1	1	1	HT313181R0	Transistor 2SC1318(R)
QU03	1	1	1	1	HC10084050	IC TC9130P
QU04	1	1	1	1	HT327852D0	Transistor 2SC2785 (F or E)
QU05	1	1	1	1	HT327852D0	Transistor 2SC2785 (F or E)
QU06	1	1	1	1	HT327852D0	Transistor 2SC2785 (F or E)
QU07	1	1	1	1	HT327852D0	Transistor 2SC2785 (F or E)
QU08	1	1	1	1	HT111752D0	Transistor 2SA1175 (F or E)
QU09	1	1	1	1	HT111752D0	Transistor 2SA1175 (F or E)
QU10	1	1	1	1	HT327852D0	Transistor 2SC2785 (F or E)
QU11	1	1	1	1	HI10011080	L.E.D. SEL1213 Red
QU12	1	1	1	1	HC10064060	IC UPC1373H
QU13	1	1	1	1	HC10071060	IC UPC1373H
QU14	1	1	1	1	HI60001060	L.E.D. PH302
QU15	1	1	1	1	HT313181R0	Transistor 2SC1318(R)

REF. DESIG.	Q'TY U	N	A	P	PART NO.	DESCRIPTION
						PU01-MISCELLANEOUS
⚠LU01	1			1	LY10240080	Relay, System 1 Outlet
⚠LU01		1	1		LY10240090	Relay, System 1 Outlet
⚠LU02	1			1	LY10240080	Relay, System 2 Outlet
⚠LU02		1	1		LY10240090	Relay, System 2 Outlet
LU03	1	1	1	1	LA74020010	Ant. Coil, 37.5kHz
WU01	1	1	1	1	YU05300260	5P, 300 mm
WU02	1	1	1	1	YU02120260	2P, 120 mm
WU03	1	1	1	1	YU02100260	2P, 100 mm
XU01	1	1	1	1	FQ04003010	Seramic Vib., CSB400P 400kHz
						PW01-REMOTE OUTPUT JACK CIRCUIT BOARD
PW01	1	1	1	1	YK013H1420	P.W. Board Remote Output Jack
	1	1	1	1	ZZ013H1420	P.W. Board Assembly
JW01	1	1	1	1	YT02020340	Terminal Output Jack
						PY01-SWITCH & L.E.D. CIRCUIT BOARD
PY01	1	1	1	1	YK013H1430	P.W. Board Switch & L.E.D.
	1	1	1	1	ZZ013H1430	P.W. Board Assembly
QY01	1	1	1	1	HI10052020	L.E.D. LN250RPH Red
QY02	1	1	1	1	HI10052020	L.E.D. LN250RPH Red
SY01	1	1	1	1	SP01010570	Push Switch
SY02	1	1	1	1	SP01010570	Push Switch
						PZ01-POWER L.E.D. CIRCUIT BOARD
PZ01	1	1	1	1	YK013H1440	P.W. Board Power L.E.D.
	1	1	1	1	ZZ013H1440	P.W. Board Power L.E.D.
QZ01	1	1	1	1	HI10052020	L.E.D. LN250RPH Red

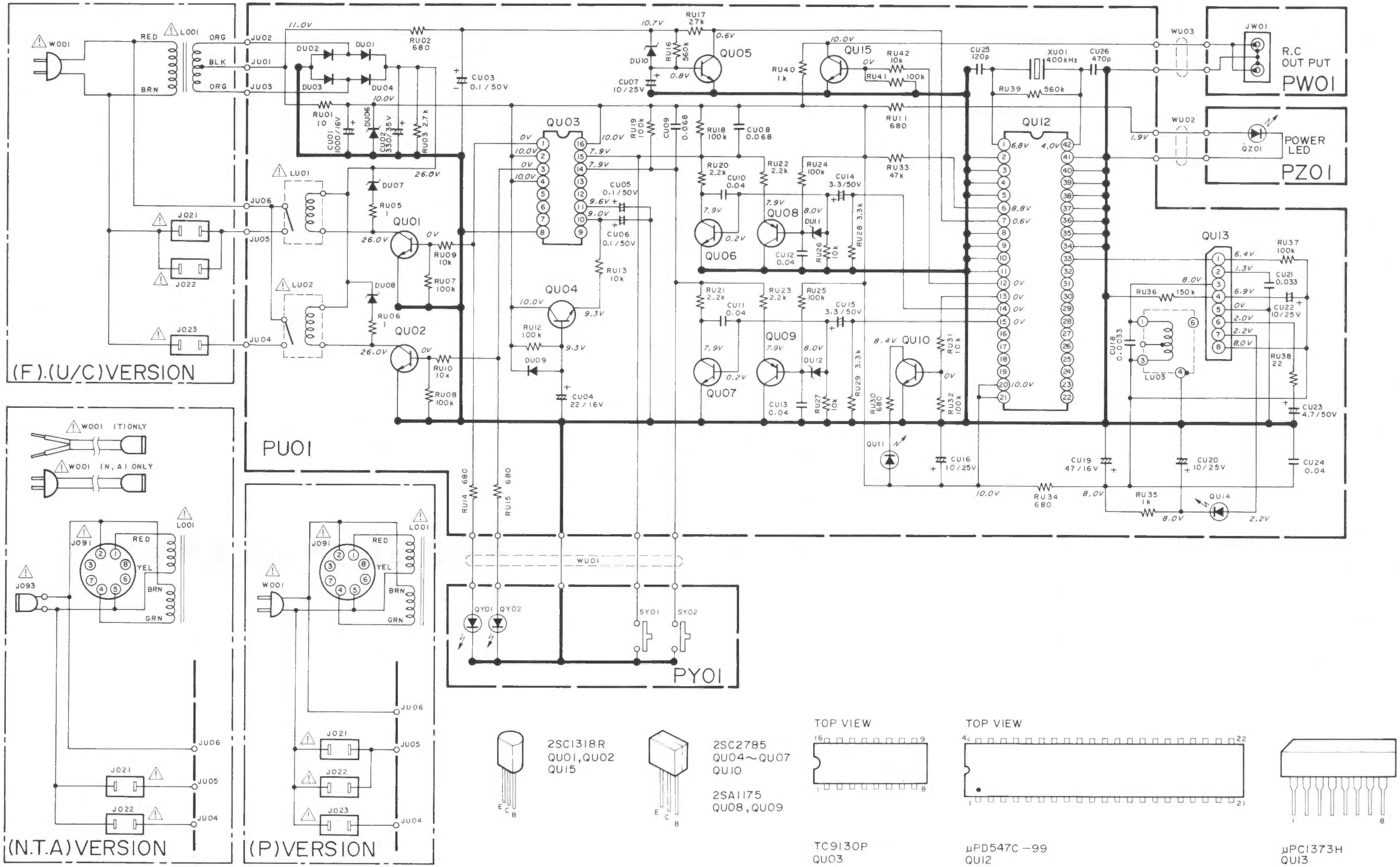
REF. DESIG.	Q'TY U	N	A	P	PART NO.	DESCRIPTION
						REMOTE CONTROL TRANSMITTER (RMC-12)
						PT00-AU CONTACT DUAL CIRCUIT BOARD
PT00	1	1	1	1	YF025H0010	P.W. Board AU Contact Dual
	1	1	1	1	ZZ025H0010	P.W. Board Assembly
						PT00-CAPACITORS
CT01	1	1	1	1	EA47405030	Elect 0.47μF 50V
CT02	1	1	1	1	DK16101300	Ceramic 100pF ±10%
CT03	1	1	1	1	DK16101300	Ceramic 100pF ±10%
						PT00-RESISTORS
RT01	1	1	1	1	GD05102140	Resistor, 1kΩ
RT02	1	1	1	1	GD05018140	Resistor, 1.8Ω
						PT00-SEMICONDUCTORS
DT01	1	1	1	1	HD20001000	Diode IS1555
DT02	1	1	1	1	HD20001000	Diode IS1555
DT03	1	1	1	1	HD20001000	Diode IS1555
DT04	1	1	1	1	HD20001000	Diode IS1555
QT01	1	1	1	1	HI10030020	L.E.D., LN224RP Red
QT02	1	1	1	1	HI20001060	L.E.D., SE303A
QT03	1	1	1	1	HI20001060	L.E.D., SE303A
QT04	1	1	1	1	HT320011K0	Transistor
QT05	1	1	1	1	HC10070060	IC, UPD6102G
						PT00-MISCELLANEOUS
ST01	1	1	1	1	SS01020400	Slide Switch
ST02	1	1	1	1	SS02020810	Slide Switch
FT01	1	1	1	1	FQ04503010	Seramic Vib. CSB450E

Memorandum

17. SCHEMATIC DIAGRAM

MODEL RC430

DU01 ~ DU04	DU06	DU07, DU08	DU09, DU10	DU11, DU12	QU01, QU02	QU03	QU04 ~ QU07	QU08, QU09	QU11	QU12	QU13	QU14	QY01, QY02
HD20022030	HD30025020	HD30015020	HD20001000	HD30007020	QU15	HC10084050	QU10	HT111752D0	HI10011080	HC10064060	HC10071060	HI60001060	QZ01
DSF10C	MA2100B, 10V	MA1240M, 24V	1S1555	MA1091M, 9V	HT313181R0	TC9130P	HT327852D0	2SA1175	SEL1213C	µPD547C-99	µPC1373H	PH302	HI10052020
					2SC1318R		2SC2785						LN250RPH



NOTE ON SAFETY:

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

Components and wiring are subject to change for modification without notice.

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