Clarion

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Closer Relations through
"Clarion Service Manual"

Service Manual

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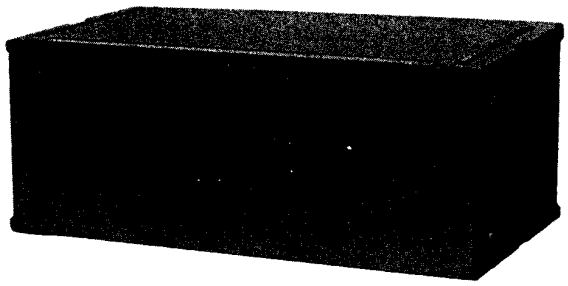
SUZUKI MOTORCYCLE GENUINE CB TRANSCEIVER

Model JC-212



■SPECIFICATIONS:

General

Number of channels:	40 CH (26.965~27.405MHz)
Frequency control system:	PLL Local OSC 10.24MHz crystal
Antenna impedance:	50 ohms
Power supply voltage:	DC 14V (Negative ground)
Current consumption:	Less than 3A
Dimensions:	Width 163mm Height 60mm Depth 115mm
Weight:	1.3kg

Receiver

Quieting sensitivity:	Better than 6dBμ (at 10dB S/N)
Audio fidelity:	1kHz=0dB 0.4kHz −2±3dB 3kHz −9±5dB
AGC. FOM:	More than 80dB
Squelch sensitivity:	
Threshold	Less than 8dBμ
Tight	30~55dB
IF stage:	1st 10.695MHz 2nd 455kHz
Selectivity:	More than 50dB (at ±10kHz detune)

Transmitter

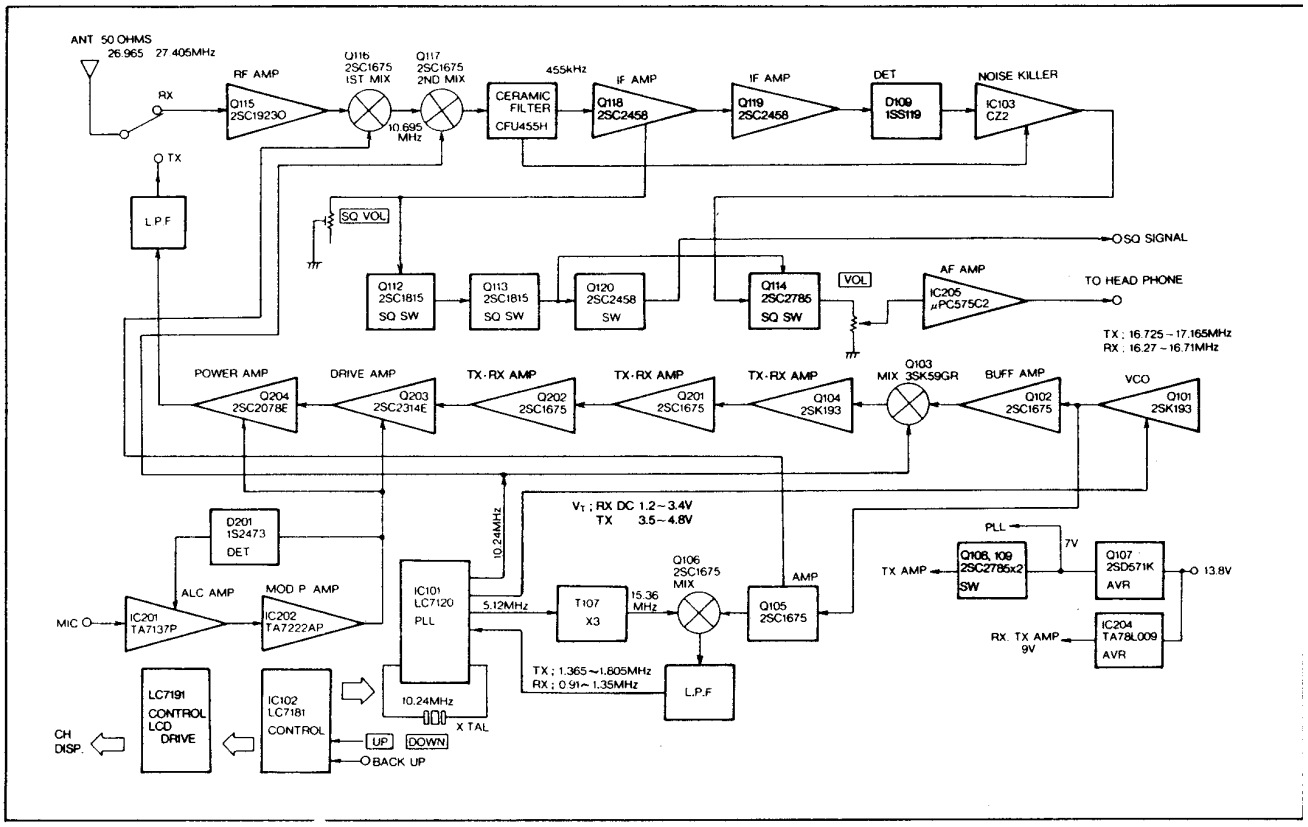
RF output:	4W max./14.0V
Modulation sensitivity:	−57±6dBm (1kHz, 50% Modulation)
Spurious suppression:	More than 60dB
Frequency tolerance:	Less than ±0.005%
S/N ratio:	More than 45dB

■COMPONENTS:

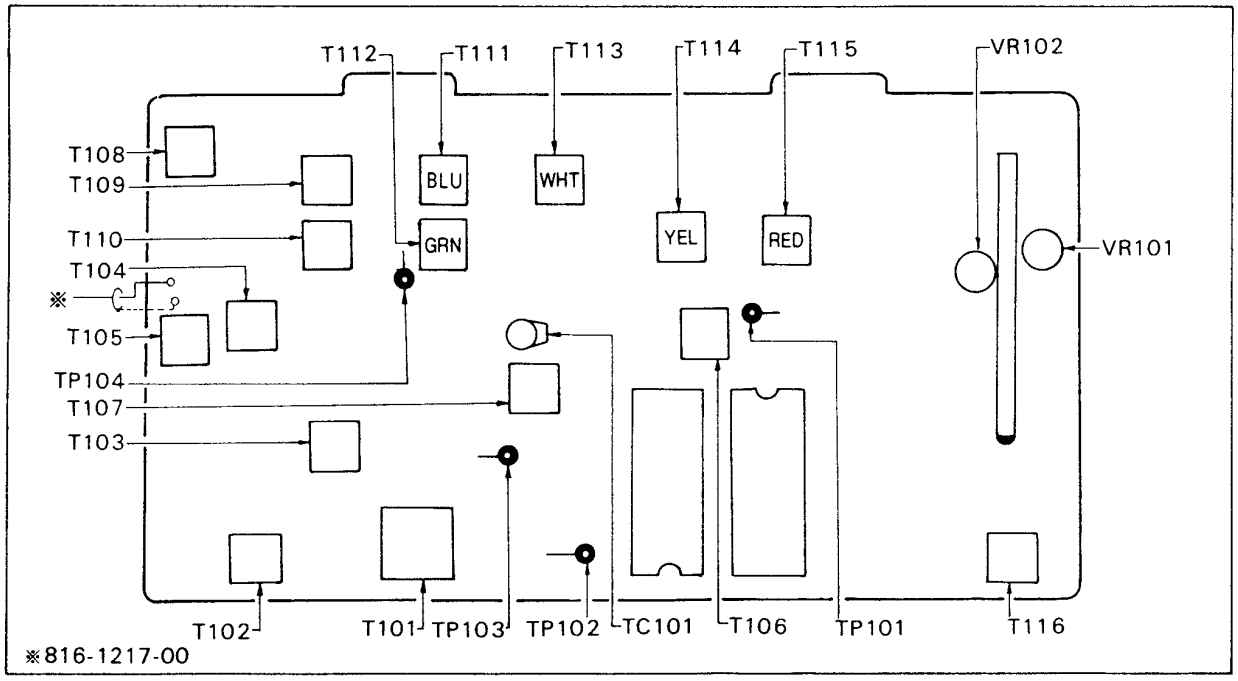
● **JC-212S-01**

Main unit		1
Mounting bracket	300-7142-00	1
Mounting bracket	300-7143-00	1
Ant. kit	PAS-205-100	1
CB controller	RKA-145-100	1
Parts bag	921-8050-00	1
Mounting bracket	300-7141-00	1
Hex-nut	723-4000-21(M4)	2
Washer	740-4000-11	2
Spring washer	741-4000-21	2

■BLOCK DIAGRAM:



■ADJUSTMENTS:

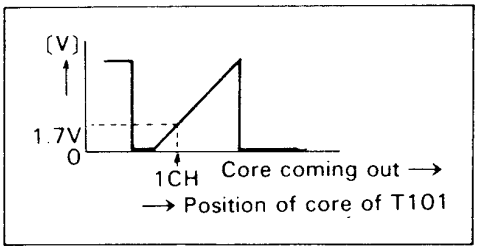


1) ADJUSTMENT OF PLL CIRCUIT

① Adjusting 10.24MHz Basic Frequency
First adjust T106 so that output of TP101 becomes maximum (approx. 160mVp-p). Then connect frequency counter to TP101 and adjust TC101 so that the frequency becomes 10.24MHz (10.24MHz±50Hz).

② Adjusting 15.36MHz
Connect synchroscope to TP103 and adjust T107 so that the level becomes maximum (approx. 110mVp-p).

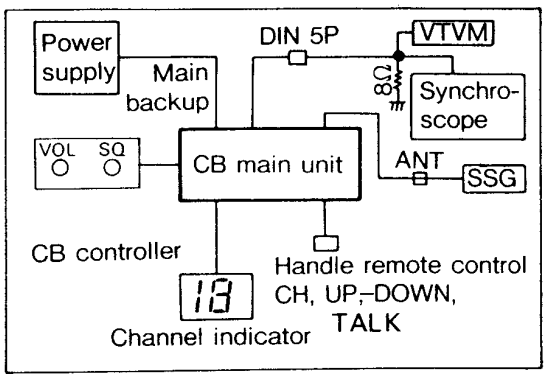
③ Adjusting VCO
Set CB channel to CH 1 and connect a DC voltmeter (multimeter) to TP102. Adjust T101 so that the voltmeter reading becomes 1.7V.



④ Adjusting Mixer No. 1 Injection Voltage
Connect synchroscope to TP104 and set channel to CH 18. Adjust T102 so that the level of TP104 becomes maximum (approx. 200mVp-p).

⑤ Adjusting TX AMP
Disconnect EXT. LEAD (816-1217-00) from transmit PC board.
Connect synchroscope to the lead. Set for transmit state on CH 18 and adjust T104 and T105 so that the level becomes maximum (approx. 4.2Vp-p).

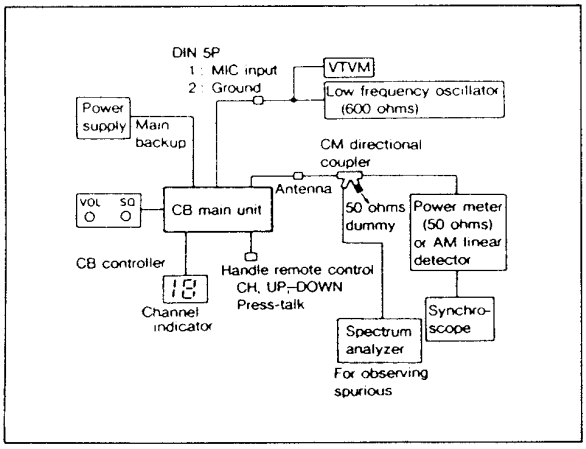
2) Adjusting RX (Receiving Section)

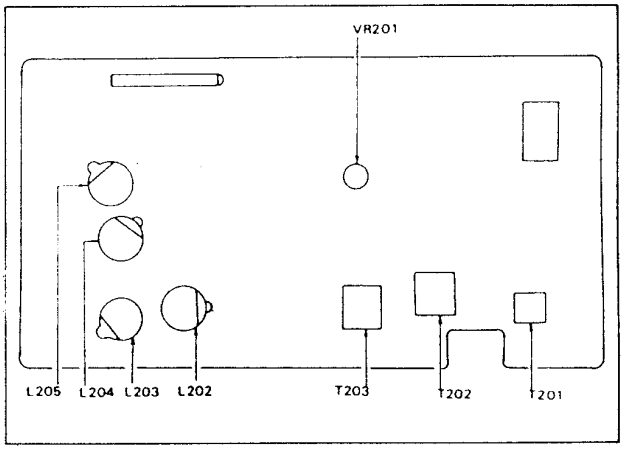


① Set channel to CH 18 and connect SSG to ANT (Set SSG to 1kHz, 30% MOD) Connect an AC voltmeter (synchroscope) to the audio output. Set VOLUME control at maximum. Adjust T108 to T115 so that the audio output becomes maximum.
Decrease SSG output according to need.

② Clean Z2 (Noise Killer)
Don't touch it as far as possible because it has been preadjusted at the factory at the time of manufacture.

3) Adjusting TX (Transmitting Section)

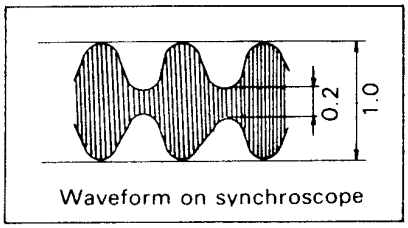




① Set channel to CH 18 and connect power meter to ANT.
Adjust T201 to T203 and L202 to L205 so that the power becomes maximum. (Adjust L202 to L205 at least two times.)

② For setting power, adjust the core of L202 (turn the core so that it moves inward) so that the power meter indicates about 3.7W. Now verify that the power output on CH 1, CH 40 is also almost the same.

③ Adjusting Modulator Circuit
Connect low frequency oscillator to microphone input. Set the oscillator's output to 1kHz, −45dBm (0dBm=1mW/600 ohms; approx. 4.5mV).
Adjust VR201 so that the depth of modulation at this time becomes 70%. If a modulation depth meter is not available, use a synchroscope for the measurement.



Waveform on synchroscope

$$\frac{1-0.2}{1+0.2}\times 100=\frac{0.8}{1.2}\times 100\fallingdotseq 70\%$$

■TROUBLE SHOOTING:

1) RX Section

Mal-function	Check point	Defective point
Sensitivity is weak	● ANT	● ANT element ● ANT cable, connector
	● OSC level to mixer (TP101, TP104)	● PLL circuit TP101: about 160mVp-p ※ TP104: about 200mVp-p ※
	● RX circuit	● Q115~119 ● T108~115
Sound is distorted		● Speaker ● Power IC205, Q114 ● Detector diode D109 ● Clean-Z_2
Squelch does not operate		● Q112~Q114 ● D110, Q118 ● Squelch VOL (controller side)

2) TX Section

Mal-function	Check point	Defective point
Transmit does not operate	● ANT	● ANT element, cable, connector
	● Output circuit	● Relay ● L202~L205 ● Q204
	● Driver circuit	● Q201~Q203 ● T201~T203
	● Input level to Q201	● About 4.2Vp-p※
No modulate	● MIC	● Microphone, cable
	● MIC Amp circuit	● IC201, 202 ● T204
MOD, ALC does not work		● IC201, D201 ● VR201 adjust
Spurious faulty		● L202~205 adjust ● PLL circuit adjust
Occupied band width faulty		● T202, 203 adjust ● VR201 adjust

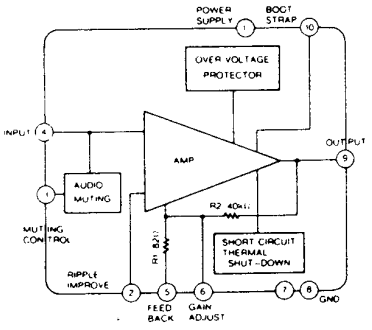
Caution: ※ Syncroscope level (Load ≒ 1MΩ)

3) PLL Section

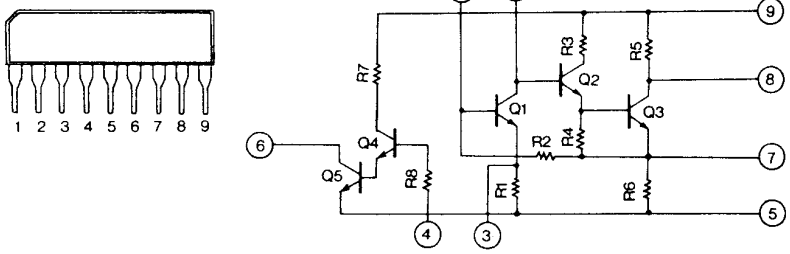
Mal-function	Check point	Defective point
10.24MHz crystal does not oscillate		● Crystal ● IC101 ● TC101
PLL does not Lock	● VCO	● IC101 ● D100, Q101 ● T101 adjust
	● Other's circuit	● Q105~106 ● T107
Transmitting Frequency 27MHz band is not put out.	● Presstalk circuit	● Relay, cable ● IC102 ● Q108~109
	● MIX and TX Amp	● Q103~104 ● T103~105

■EXPLANATION OF IC's:

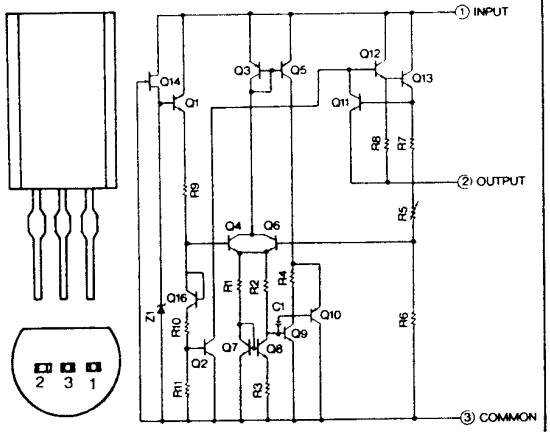
● 051-0181-10 TA7222AP
Audio power amp.



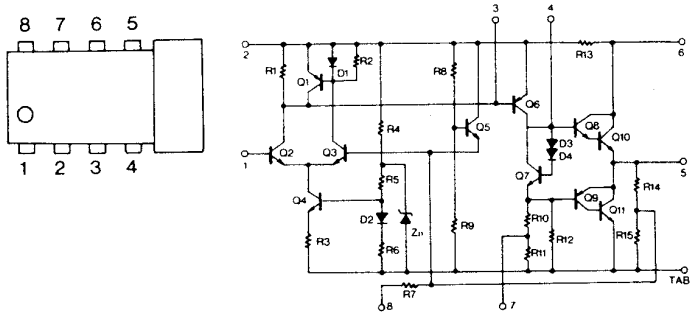
● 051-0263-00 TA7137P
Pre-amp.



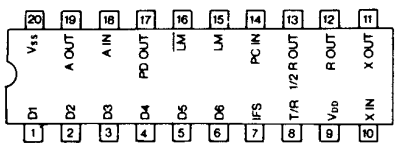
● 051-0278-00 TA78L009AP
Voltage regulator (9V)



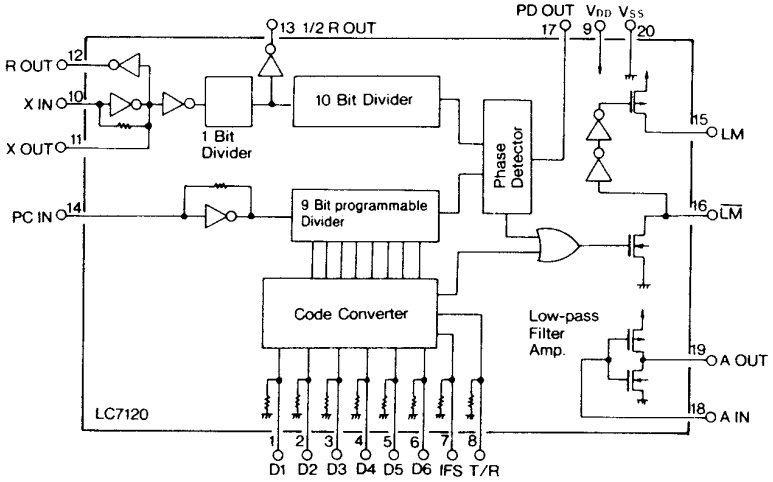
● 051-0303-00 μPC575C2
Audio power amp.



●051-0226-00 LC7120
CB transceiver PLL synthesizer



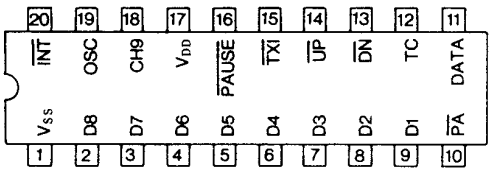
Top view



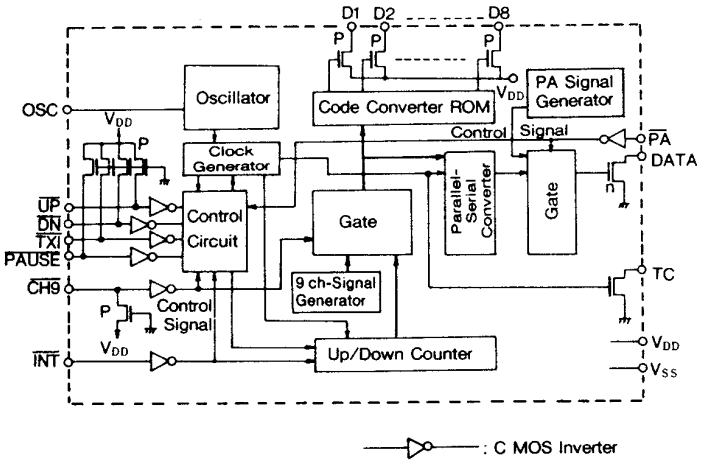
PINS

D1–D6	Program Input (BCD) D1:LSB, D6:MSB	V_{DD}	Supply Voltage
T/R	TX/RX SW	PD OUT	Phase Detector Output
IFS	10.695/9.785MHz SW	1/2 R OUT	1/2 Frequency of Reference Osc.
A-IN	Filter Amp Input	R OUT	Buffer Output of Reference Osc.
A-OUT	Filter Amp Output	X-IN X-OUT	Crystal Oscillator
LM	Lock Monitor Output	PC IN	Programmable Divider Input
$\overline{LM}$	Lock Monitor Output		
V_{SS}	Ground		

●051-0227-00 LC7181
CB transceiver channel selecting



Top view



: C MOS Inverter

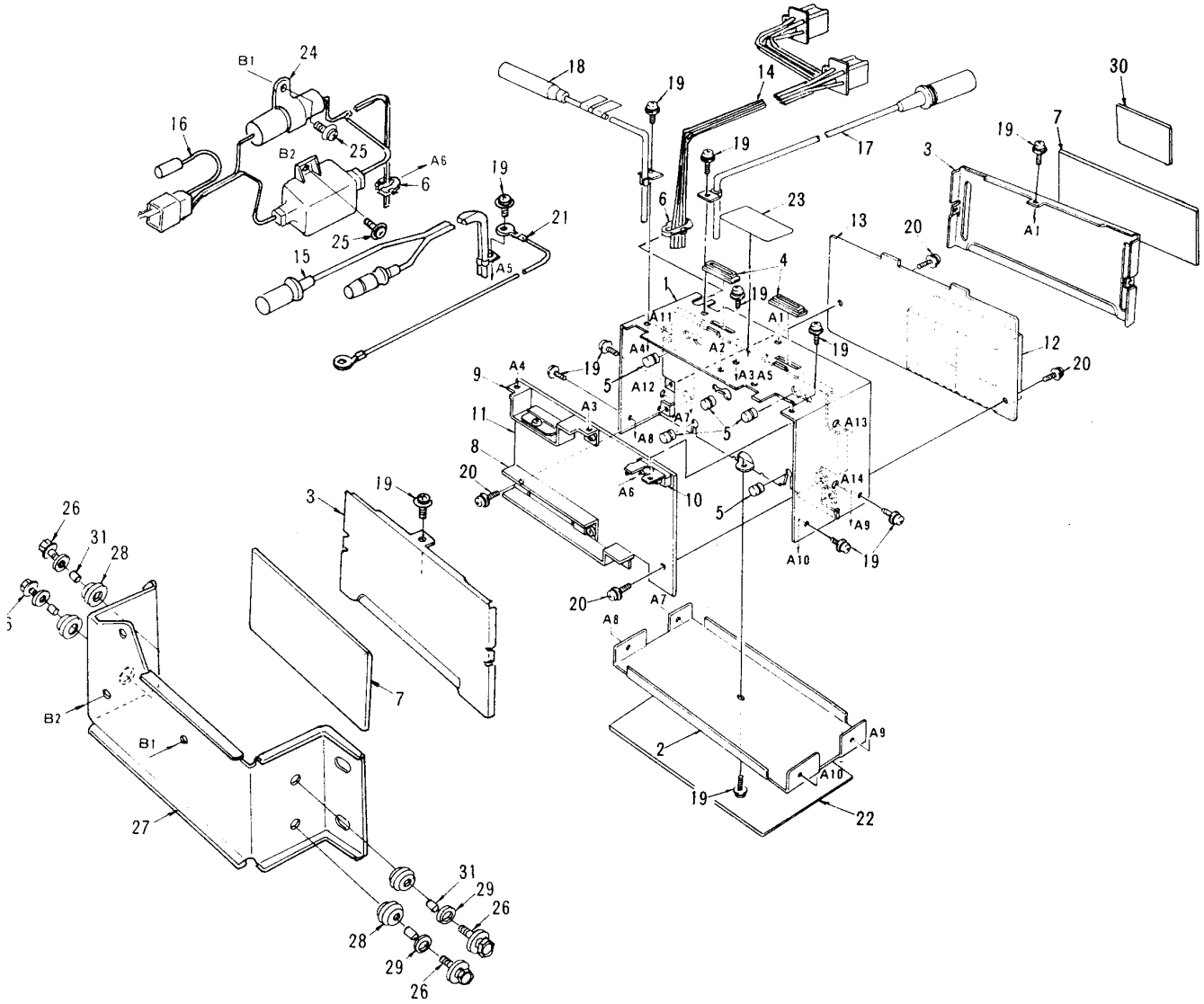
■LC7181 Channel Number vs. Data Outputs (BCD code, D1 to D8)

CH	FREQ.	PROGRAM DATA (BCD) D1	D2	D3	D4	D5	D6	D7	D8
1	26.965MHz	1	0	0	0	0	0	0	0
2	26.975	0	1	0	0	0	0	0	0
3	26.985	1	1	0	0	0	0	0	0
4	27.005	0	0	1	0	0	0	0	0
5	27.015	1	0	1	0	0	0	0	0
6	27.025	0	1	1	0	0	0	0	0
7	27.035	1	1	1	0	0	0	0	0
8	27.055	0	0	0	1	0	0	0	0
9	27.065	1	0	0	1	0	0	0	0
10	27.075	0	0	0	0	1	0	0	0
11	27.085	1	0	0	0	1	0	0	0
12	27.105	0	1	0	0	1	0	0	0
13	27.115	1	1	0	0	1	0	0	0
14	27.125	0	0	1	0	1	0	0	0
15	27.135	1	0	1	0	1	0	0	0
16	27.155	0	1	1	0	1	0	0	0
17	27.165	1	1	1	0	1	0	0	0
18	27.175	0	0	0	1	1	0	0	0
19	27.185	1	0	0	1	1	0	0	0
20	27.205	0	0	0	0	0	1	0	0
21	27.215	1	0	0	0	0	1	0	0
22	27.225	0	1	0	0	0	1	0	0
23	27.255	1	1	0	0	0	1	0	0
24	27.235	0	0	1	0	0	1	0	0
25	27.245	1	0	1	0	0	1	0	0
26	27.265	0	1	1	0	0	1	0	0
27	27.275	1	1	1	0	0	1	0	0
28	27.285	0	0	0	1	0	1	0	0
29	27.295	1	0	0	1	0	1	0	0
30	27.305	0	0	0	0	1	1	0	0
31	27.315	1	0	0	0	1	1	0	0
32	27.325	0	1	0	0	1	1	0	0
33	27.335	1	1	0	0	1	1	0	0
34	27.345	0	0	1	0	1	1	0	0
35	27.355	1	0	1	0	1	1	0	0
36	27.365	0	1	1	0	1	1	0	0
37	27.375	1	1	1	0	1	1	0	0
38	27.385	0	0	0	1	1	1	0	0
39	27.395	1	0	0	1	1	1	0	0
40	27.405	0	0	0	0	0	0	0	0

0: SW SHORT(COMMON) "L"level
1: SW OPEN "H"level

■EXPLODED VIEW • PARTS LIST: JC-212S-01

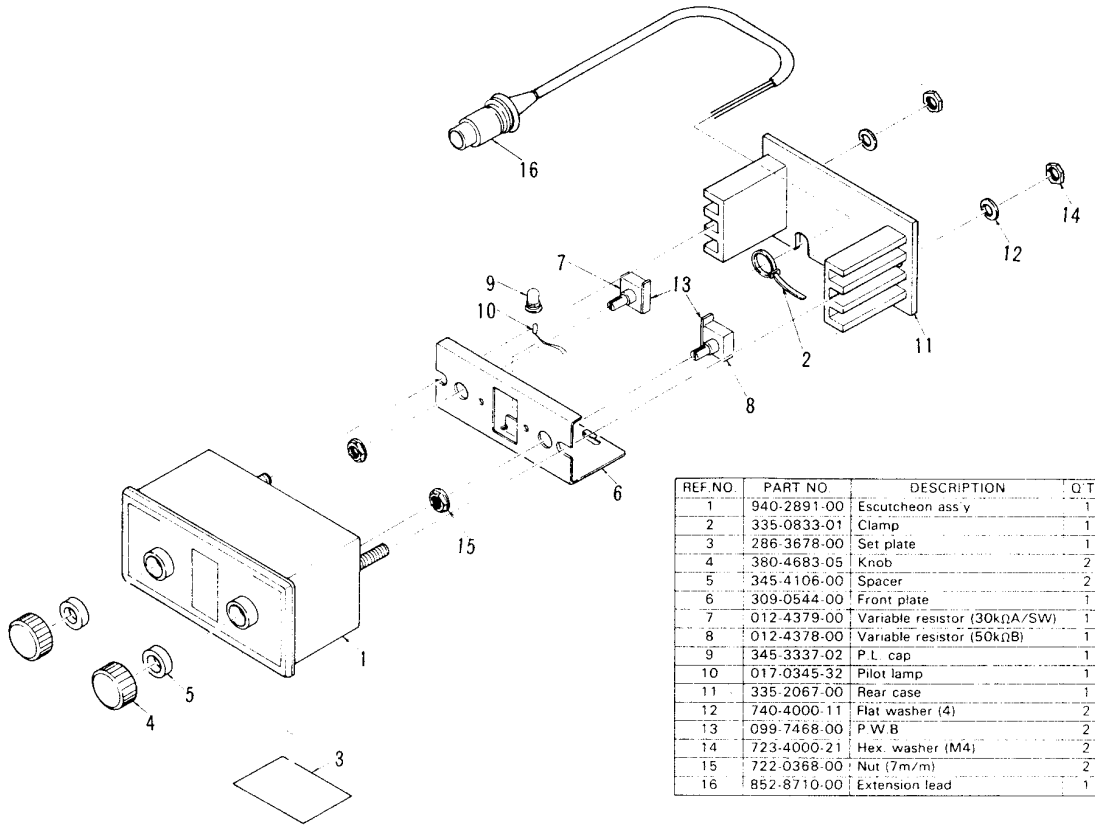
◎Main section



REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
1	312-0225-01	Chassis	1
2	304-0349-00	Lower cover	1
3	305-0218-00	Side cover	2
4	345-3211-00	P.W.B holder	2
5	345-3528-00	Rubber stopper	5
6	335-0580-00	Lead holder	2
7	345-4143-00	Insulator	2
8	313-1144-00	Heat sink	1
9	313-1145-00	Heat sink	1
10	944-0627-00	Filter ass'y	1
11	099-6489-02	P.W.B	1
12	330-7510-00	Shield case	1
13	099-7012-01	P.W.B	1
14	852-8709-00	Extension lead	1
15	852-8711-00	Extension lead	1
16	852-8708-00	Extension lead	1

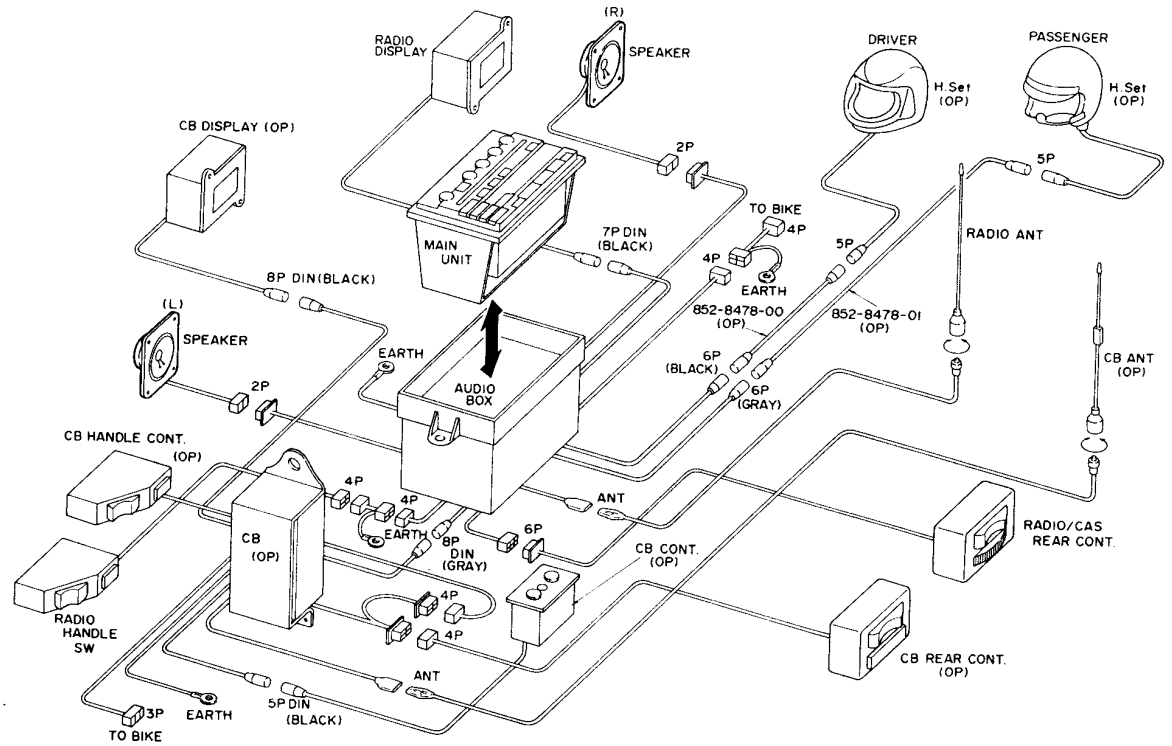
REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
17	852-7901-01	Extension lead	1
18	092-0571-01	Antenna receptacle	1
19	735-3006-11	D-sems screw (M3x12)	12
20	735-3008-11	D-sems screw (M3x8)	4
21	840-0440-00	Bonding wire	1
22	345-4166-00	Insulator	1
23	286-3678-00	Set plate	1
24	321-0928-00	Clump	1
25	735-4010-11	D-sems screw (M4x10)	2
26	734-5016-31	D-sems Hex-nut	4
27	300-7142-00	Mounting bracket	1
28	345-3511-00	Bracket rubber	4
29	745-0625-00	Washer	4
30	285-1209-00	Label	1
31	340-0472-01	Spacer	4

■CB CONTROLLER: RKA-145-100

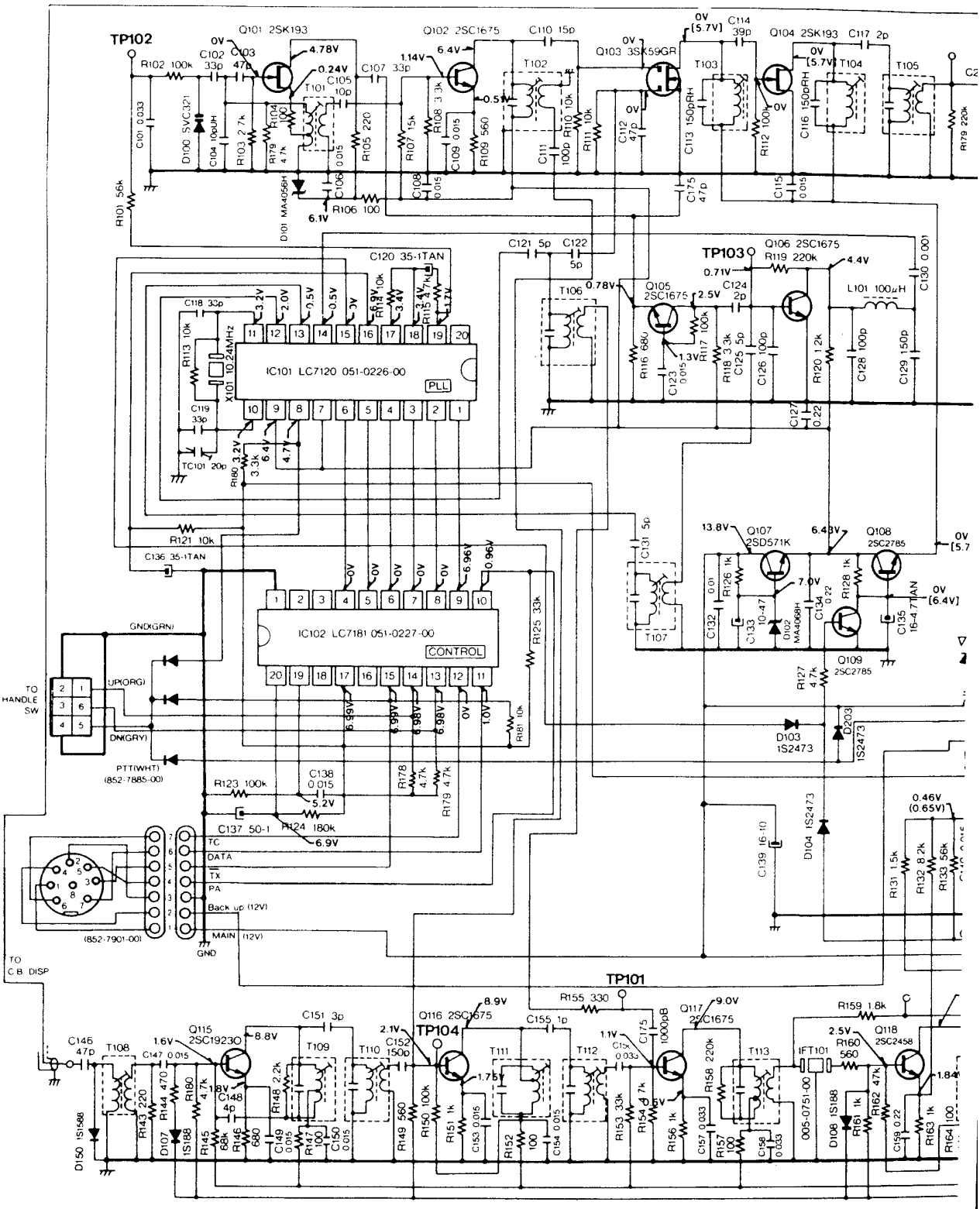


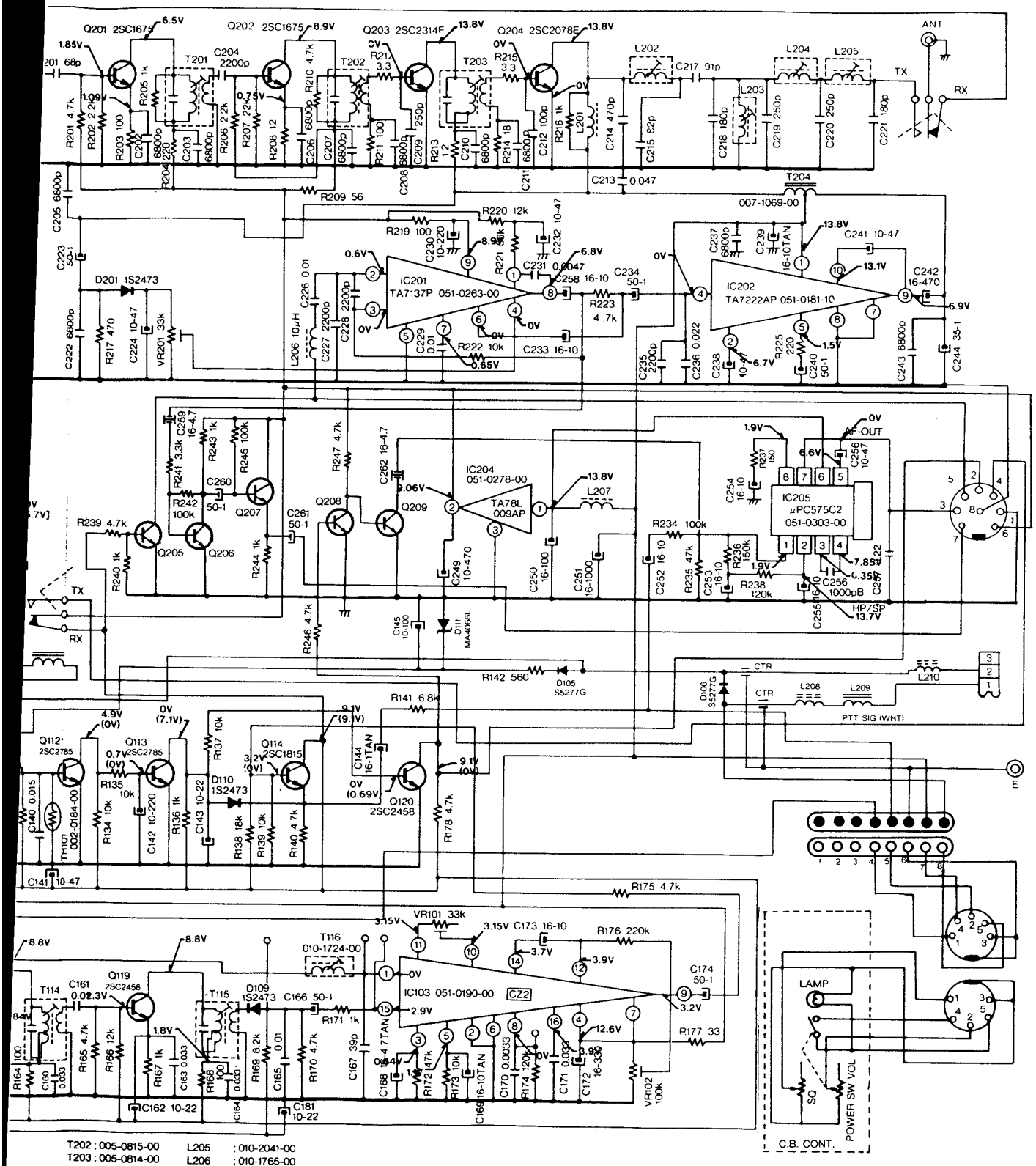
REF.NO.	PART NO.	DESCRIPTION	Q'TY
1	940-2891-00	Escutcheon ass'y	1
2	335-0833-01	Clamp	1
3	286-3678-00	Set plate	1
4	380-4683-05	Knob	2
5	345-4106-00	Spacer	2
6	309-0544-00	Front plate	1
7	012-4379-00	Variable resistor (30kΩA/SW)	1
8	012-4378-00	Variable resistor (50kΩB)	1
9	345-3337-02	P.L. cap	1
10	017-0345-32	Pilot lamp	1
11	335-2067-00	Rear case	1
12	740-4000-11	Flat washer (4)	2
13	099-7468-00	P.W.B	2
14	723-4000-21	Hex. washer (M4)	2
15	722-0368-00	Nut (7m/m)	2
16	852-8710-00	Extension lead	1

■OVERALL CONNECTIONS:



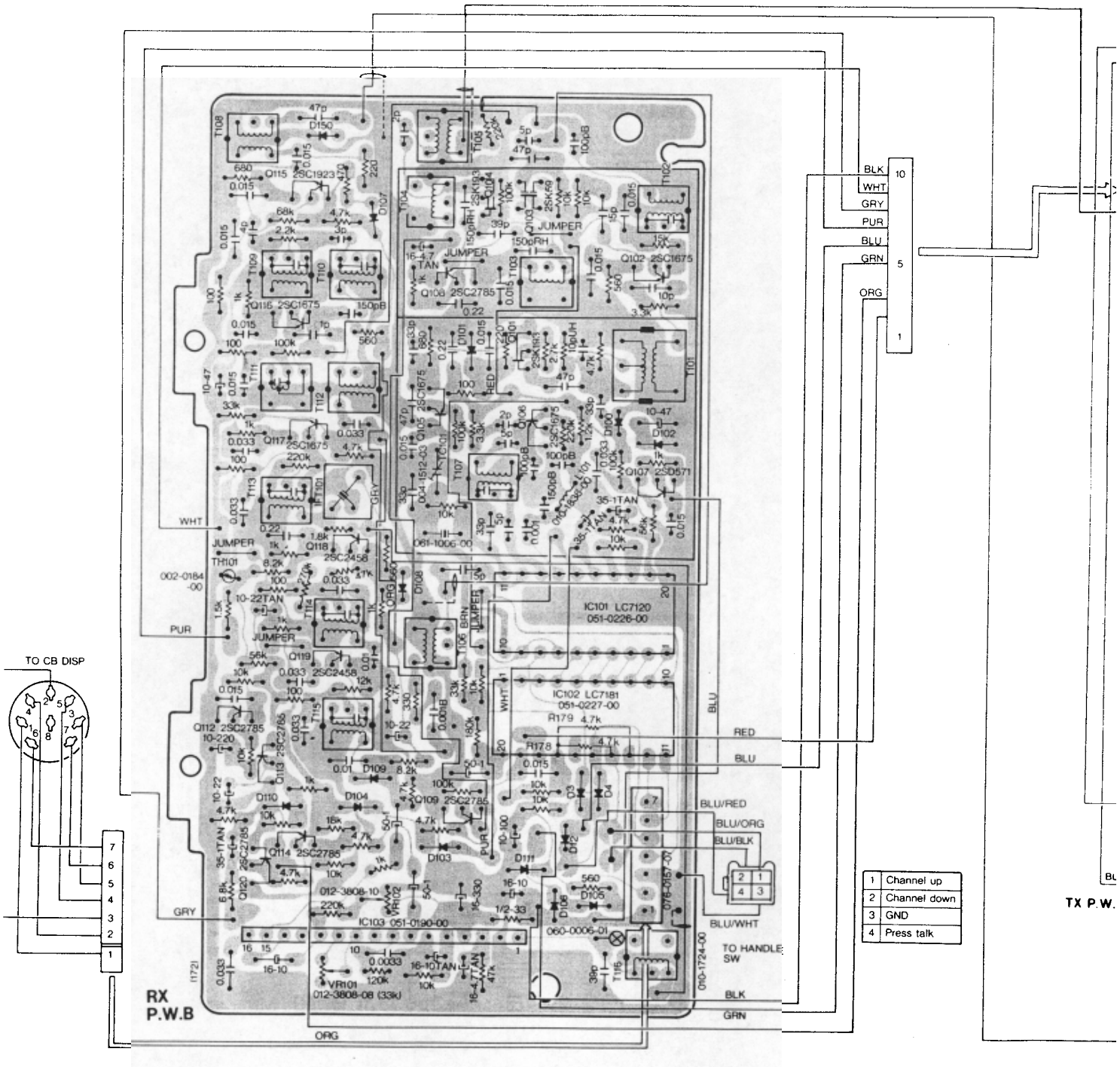
■CIRCUIT DIAGRAM:

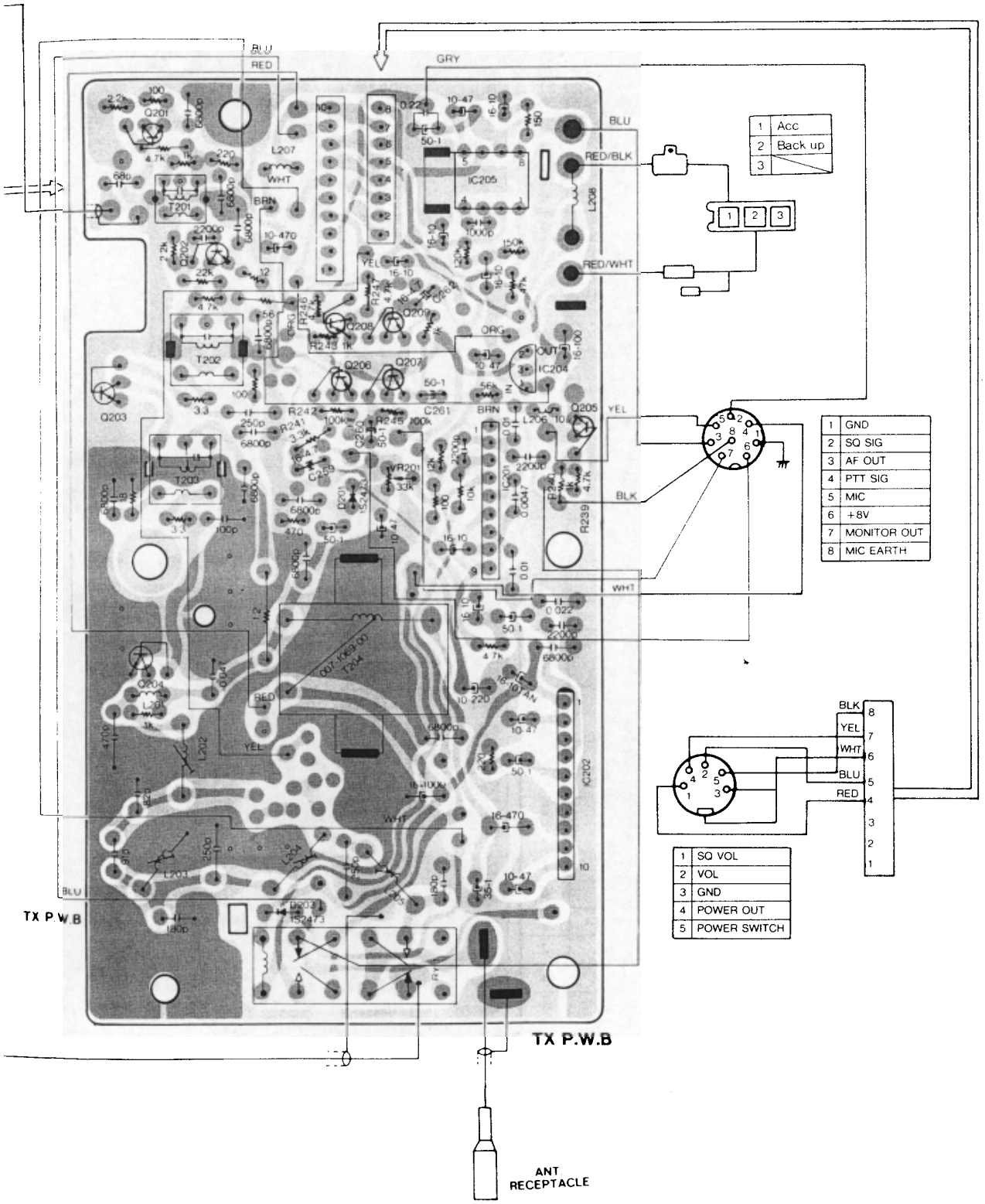




T202 ; 005-0815-00
T203 ; 005-0814-00
762-00 L101 ; 010-1838-00
761-00 L201 ; 010-1788-00
750-00 L202 ; 010-1792-00
752-00 L203 ; 010-2040-00
753-00 L204 ; 010-2042-00
L205 ; 010-2041-00
L206 ; 010-1765-00
L207,208 ; 010-1686-01
L209 ; 009-0627-00
L210 ; 010-2038-00

■PRINTED WIRING BOARD:




BLU
RED
GRY
BLU
RED/BLK
RED/WHT
BLK
YEL
WHT
BLU
RED
BLU
TX P.W.B
TX P.W.B
ANT
RECEPTACLE
1 Acc
2 Back up
3
1 GND
2 SQ SIG
3 AF OUT
4 PTT SIG
5 MIC
6 +8V
7 MONITOR OUT
8 MIC EARTH
1 SQ VOL
2 VOL
3 GND
4 POWER OUT
5 POWER SWITCH
BLK 8
YEL 7
WHT 6
BLU 5
RED 4
3
2
1

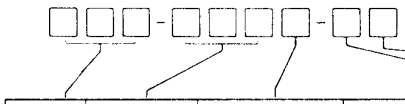
REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
L_{202}	010-1792-00	Coil	1
L_{203}	010-2040-00	Coil	1
L_{205}	010-2041-00	Coil	1
L_{204}	010-2042-00	Coil	1
VR_{201}	012-3808-08	Variable resistor (33kΩ)	1
RY_1	014-0478-00	Relay	1
IC_{202}	051-0181-10	IC (TA7222AP)	1
IC_{201}	051-0263-00	IC (TA7137P)	1
IC_{204}	051-0278-00	IC (TA78L009AP)	1
IC_{205}	051-0303-00	IC (μPC575C2)	1
$Q_{201,202}$	102-1675-12	Transistor (2SC1675L)	2
Q_{204}	102-2078-05	Transistor (2SC2078E)	1
Q_{203}	102-2314-05	Transistor (2SC2314E)	1
$Q_{205\sim209}$	102-2458-00	Transistor (2SC2458Y)	5
$C_{226,229}$	141-1032-10	Polyester capacitor (50V0.01μF)	2
C_{236}	141-2232-10	Polyester capacitor (50V0.022μF)	1
C_{231}	141-4722-10	Polyester capacitor (50V0.0047μF)	1
C_{257}	172-2242-20	Polyester capacitor (0.22μF)	1
C_{212}	144-1012-10	Mica capacitor (50V100pF)	1
$C_{218,221}$	144-1812-10	Mica capacitor (50V180pF)	2

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
C_{214}	144-4712-10	Mica capacitor (50V470pF)	1
C_{201}	144-6802-10	Mica capacitor (50V68pF)	1
C_{215}	144-8202-10	Mica capacitor (50V82pF)	1
C_{217}	144-9102-10	Mica capacitor (50V91pF)	1
$C_{209,219,220}$	043-0192-00	Mica capacitor (250pF)	3
C_{256}	160-1022-05	Ceramic capacitor (1000pF)	1
$C_{204,227,228,235}$	160-2222-05	Ceramic capacitor (2200pF)	4
$C^{202,203,205,206}_{207,208,210,211}$ $_{222,237,243}$	160-6822-05	Ceramic capacitor (6800pF)	11
C_{213}	171-4733-06	Ceramic capacitor (25V0.047μF)	1
C_{239}	042-0176-00	Electrolytic capacitor (16V10μF TAN)	1
C_{244}	042-0186-01	Electrolytic capacitor (35V1μF TAN)	1
C_{250}	179-1073-32	Electrolytic capacitor (16V100μF)	1
C_{251}	179-1083-33	Electrolytic capacitor (16V1000μF)	1
C_{230}	179-2273-22	Electrolytic capacitor (10V220μF)	1
C_{249}	179-4773-23	Electrolytic capacitor (10V470μF)	1
C_{242}	179-4773-33	Electrolytic capacitor (16V470μF)	1
$C^{223,234,240,260}_{261}$	182-1053-62	Electrolytic capacitor (50V1μF)	5
$C^{233,252,253,254}_{255,258}$	182-1063-32	Electrolytic capacitor (16V10μF)	6
$C^{224,232,238,241}_{256}$	182-4763-22	Electrolytic capacitor (10V47μF)	5
$C_{259,262}$	182-4756-32	Electrolytic capacitor (16V4.7μF NP)	2

● How to read resistor

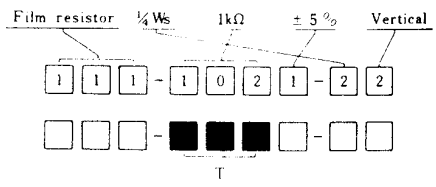
Resistors are deleted from the table of electric components, (except metal film resistors and special resistors) They can be converted to product Nos. as follows.

Film resistor (Carbon film resistor)



Classification	Resistance *	Tolerance of the value of resistance		Rated power			Shape	
		0		0			0	
	Example	1	± 5 %	1	1/8W	Approx. 3.7mm	1	Horizontal
	33Ω = 330	2		2	1/4Ws	Approx. 6.5mm	2	Vertical
	33kΩ = 333	3		3			3	
1 1 1		4		4	1/2W	Approx. 9mm	4	
				7	1/6W	Approx. 3.5mm		
				8	1/2Ws	Approx. 6.6mm		
				9	1/4Wss	Approx. 3.2mm		

(Example)



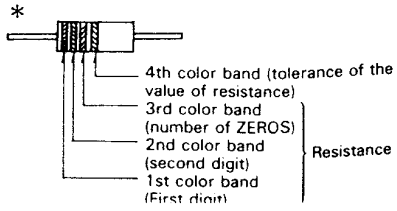
Note 1. The first two of three digits representing resistance are effective digits and the last one represents number of "0" following this.
Unit is given in ohm (Ω).

Example of conversion of resistance T ■■■□

Note) R : Resistance, T : Converted value

R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T
Ω		Ω		Ω		Ω		Ω		kΩ		kΩ		kΩ		MΩ		MΩ	
0.1	108	1.0	109	10	100	100	101	1.0	102	10	103	100	104	1.0	105	10	106	100	107
0.15	158	1.5	159	15	150	150	151	1.5	152	15	153	150	154	1.5	155	15	156	150	157

COLOR	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	GOLD	SILVER	NO COLOR
1st color band	0	1	2	3	4	5	6	7	8	9			
2nd color band	0	1	2	3	4	5	6	7	8	9			
3rd color band	10^0	10^1	10^2	10^3	10^4	10^5	10^6				10^{-1}	10^{-2}	
4th color band											± 5% (J)	± 10% (K)	± 20% (M)



■PARTS LIST:

◎Electrical section

◎RX P.W.B

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
$D_{107,108,150}$	001-0180-00	Diode (1S188FM)	3
$D_{12,105,106}$	001-0263-01	Diode (S5277G)	3
D_{100}	001-0281-01	Diode (SVC321SP)	1
D_{101}	001-0347-33	Diode (MA4056H)	1
D_{111}	001-0347-37	Diode (MA4068L)	1
D_{102}	001-0347-39	Diode (MA4068H)	1
$D_{110}^{3,4,103,104,109}$	001-0352-91	Diode (1SS178)	6
TH_{101}	002-0184-00	Thermistor	1
TC_{101}	004-1512-03	Trimmer	1
T_{113}	005-0750-00	IF-transformer	1
IFT_{101}	005-0751-00	IF-transformer	1
T_{114}	005-0752-00	IF-transformer	1
T_{115}	005-0753-00	IF-transformer	1
T_{112}	005-0761-00	IF-transformer	1
T_{111}	005-0762-00	IF-transformer	1
T_{107}	005-0808-01	IF-transformer	1
T_{102}	005-0809-01	IF-transformer	1
T_{106}	005-0810-01	IF-transformer	1
$T_{105,109,110}$	005-0922-00	IF-transformer	3
T_{116}	010-1724-00	Coil	1
L_{101}	010-1838-00	Coil	1
T_{101}	010-1864-00	Coil	1
$T_{103,104}$	010-1865-01	Coil	2
T_{108}	010-2039-00	Coil	1
VR_{101}	012-3808-08	Variable resistor (33kΩ)	1
VR_{102}	012-3808-10	Variable resistor (100kΩ)	1
IC_{103}	051-0190-00	IC (CZ2)	1
IC_{101}	051-0226-00	IC (LC7120)	1
IC_{102}	051-0227-00	IC (LC7181)	1
X_{101}	061-1006-01	Crystal (10.24MHz)	1
$Q_{117}^{102,105,106,116}$	102-1675-12	Transistor (2SC1675L)	5
Q_{115}	102-1923-15	Transistor (2SC1923-O)	1
$Q_{118,119}$	102-2458-25	Transistor (2SC2458Y)	2
$Q_{114,120}^{108,109,112,113}$	102-2785-49	Transistor (2SC2785)	6
Q_{107}	103-0571-11	Transistor (2SD571K)	1
$Q_{101,104}$	108-0193-12	FET (2SK193L)	2
Q_{103}	124-0059-28	FET (3SK59GR)	1
R_{171}	032-0059-01	Film resistor (¼Ws1kΩ)	1
R_{170}	032-0059-03	Film resistor (¼Ws4.7kΩ)	1
R_{172}	032-0059-07	Film resistor (¼Ws47kΩ)	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
R_{155}	032-0059-15	Film resistor (¼Ws330Ω)	1
R_{149}	032-0059-40	Film resistor (¼Ws560Ω)	1
R_{159}	032-0059-45	Film resistor (¼Ws1.8kΩ)	1
R_{101}	032-0059-54	Film resistor (¼Ws56kΩ)	1
R_{174}	032-0059-57	Film resistor (¼Ws120kΩ)	1
R_{119}	032-0059-60	Film resistor (¼Ws220kΩ)	1
$C_{111,126,128}$	160-1012-05	Ceramic capacitor (100pF B)	3
C_{175}	160-1022-05	Ceramic capacitor (1000pF B)	1
$C_{129,152}$	160-1512-05	Ceramic capacitor (150pF B)	2
$C_{123,138,140,147,149,150,153,154}^{106,108,109,115}$	171-1533-06	Ceramic capacitor (25V0.015μF SR)	12
C_{171}	172-3332-20	Polyester capacitor (0.033μF)	1
C_{105}	174-1000-13	Ceramic capacitor (10pF CH)	1
C_{104}	174-1000-56	Ceramic capacitor (10pF UH)	1
C_{155}	174-1090-13	Ceramic capacitor (1pF CH)	1
C_{110}	174-1500-13	Ceramic capacitor (15pF CH)	1
$C_{113,116}$	174-1510-37	Ceramic capacitor (150pF RH)	2
$C_{117,124}$	174-2090-13	Ceramic capacitor (2pF CH)	2
C_{151}	174-3090-13	Ceramic capacitor (3pF CH)	1
$C_{102,107,118,119}$	174-3300-13	Ceramic capacitor (33pF CH)	4
$C_{114,167}$	174-3900-13	Ceramic capacitor (39pF CH)	2
C_{148}	174-4090-13	Ceramic capacitor (4pF CH)	1
$C_{103,112,146,175}$	174-4700-13	Ceramic capacitor (47pF CH)	4
$C_{121,122,125,131}$	174-5090-13	Ceramic capacitor (5pF CH)	4
$C_{127,134,159}$	172-2242-20	Polyester capacitor (0.22μF)	3
C_{130}	173-1022-10	Polyester capacitor (0.001μF)	1
$C_{161,165}$	173-1032-10	Polyester capacitor (0.01μF)	2
C_{170}	173-3322-10	Polyester capacitor (0.0033μF)	1
$C_{160,163,164}^{101,156,157,158}$	173-3332-10	Polyester capacitor (0.033μF)	7
$C_{135,168}$	042-0174-00	Electrolytic capacitor (16V4.7μF TAN)	2
C_{169}	042-0176-00	Electrolytic capacitor (16V10μF TAN)	1
$C_{120,136,144}$	042-0186-02	Electrolytic capacitor (35V1μF TAN)	3
C_{162}	042-0199-01	Electrolytic capacitor (10V22μF TAN)	1
C_{145}	179-1073-22	Electrolytic capacitor (10V100μF)	1
C_{142}	179-2273-23	Electrolytic capacitor (10V220μF)	1
C_{172}	179-3373-33	Electrolytic capacitor (16V330μF)	1
$C_{133,141}$	179-4763-22	Electrolytic capacitor (10V47μF)	2
C_{139}	182-1063-32	Electrolytic capacitor (16V10μF)	1
$C_{143,181}$	182-2263-22	Electrolytic capacitor (10V22μF)	2
$C_{137,166,174}$	183-1053-62	Electrolytic capacitor (50V1μF)	3
C_{173}	183-1063-32	Electrolytic capacitor (16V10μF)	1

◎TX P.W.B

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
$D_{201,203}$	001-0110-00	Diode (1S2473)	2
T_{203}	005-0814-00	IF-transformer	1
T_{202}	005-0815-00	IF-transformer	1
T_{201}	005-0922-00	IF-transformer	1

REF.NO	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
T_{204}	007-1069-00	Output-transformer	1
$L_{207,208}$	010-1686-01	Coil	2
L_{206}	010-1745-00	Coil	1
L_{201}	010-1788-01	Coil	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
L_{202}	010-1792-00	Coil	1
L_{203}	010-2040-00	Coil	1
L_{205}	010-2041-00	Coil	1
L_{204}	010-2042-00	Coil	1
VR_{201}	012-3808-08	Variable resistor (33kΩ)	1
RY_1	014-0478-00	Relay	1
IC_{202}	051-0181-10	IC (TA7222AP)	1
IC_{201}	051-0263-00	IC (TA7137P)	1
IC_{204}	051-0278-00	IC (TA78L009AP)	1
IC_{205}	051-0303-00	IC (μPC575C2)	1
$Q_{201,202}$	102-1675-12	Transistor (2SC1675L)	2
Q_{204}	102-2078-05	Transistor (2SC2078E)	1
Q_{203}	102-2314-05	Transistor (2SC2314E)	1
$Q_{205\sim209}$	102-2458-00	Transistor (2SC2458Y)	5
$C_{226,229}$	141-1032-10	Polyester capacitor (50V0.01μF)	2
C_{236}	141-2232-10	Polyester capacitor (50V0.022μF)	1
C_{231}	141-4722-10	Polyester capacitor (50V0.0047μF)	1
C_{257}	172-2242-20	Polyester capacitor (0.22μF)	1
C_{212}	144-1012-10	Mica capacitor (50V100pF)	1
$C_{218,221}$	144-1812-10	Mica capacitor (50V180pF)	2

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
C_{214}	144-4712-10	Mica capacitor (50V470pF)	1
C_{201}	144-6802-10	Mica capacitor (50V68pF)	1
C_{215}	144-8202-10	Mica capacitor (50V82pF)	1
C_{217}	144-9102-10	Mica capacitor (50V91pF)	1
$C_{209,219,220}$	043-0192-00	Mica capacitor (250pF)	3
C_{256}	160-1022-05	Ceramic capacitor (1000pF)	1
$C_{204,227,228,235}$	160-2222-05	Ceramic capacitor (2200pF)	4
$C^{202,203,205,206,207,208,210,211,222,237,243}$	160-6822-05	Ceramic capacitor (6800pF)	11
C_{213}	171-4733-06	Ceramic capacitor (25V0.047μF)	1
C_{239}	042-0176-00	Electrolytic capacitor (16V10μF TAN)	1
C_{244}	042-0186-01	Electrolytic capacitor (35V1μF TAN)	1
C_{250}	179-1073-32	Electrolytic capacitor (16V100μF)	1
C_{251}	179-1083-33	Electrolytic capacitor (16V1000μF)	1
C_{230}	179-2273-22	Electrolytic capacitor (10V220μF)	1
C_{249}	179-4773-23	Electrolytic capacitor (10V470μF)	1
C_{242}	179-4773-33	Electrolytic capacitor (16V470μF)	1
$C^{223,234,240,260}_{261}$	182-1053-62	Electrolytic capacitor (50V1μF)	5
$C^{233,252,253,254,255,258}$	182-1063-32	Electrolytic capacitor (16V10μF)	6
$C^{224,232,238,241}_{256}$	182-4763-22	Electrolytic capacitor (10V47μF)	5
$C_{259,262}$	182-4756-32	Electrolytic capacitor (16V4.7μF NP)	2

● How to read resistor

Resistors are deleted from the table of electric components, (except metal film resistors and special resistors). They can be converted to product Nos. as follows.

Film resistor (Carbon film resistor)

□□□-□□□□-□□

Classification	Resistance *	Tolerance of the value of resistance		Rated power		Shape	
1 1 1		0		0		0	
	Example	1	± 5 %	1	1/8W Approx. 3.7mm	1	Horizontal
	33Ω = 330	2		2	1/4 Ws Approx. 6.5mm	2	Vertical
	33kΩ = 333	3		3		3	
		4		4	1/2W Approx. 9mm	4	
				7	1/8W Approx. 3.5mm		
				8	1/2Ws Approx. 6.6mm		
				9	1/4Wss Approx. 3.2mm		

(Example)

Film resistor 1/4Ws 1kΩ ± 5 % Vertical

1 1 1 - 1 0 2 1 - 2 2

□□□-■■■□-□□

T

Note 1. The first two of three digits representing resistance are effective digits and the last one represents number of "0" following this.
Unit is given in ohm (Ω).

Example of conversion of resistance ■■■□ (T)

Note) R : Resistance, T : Converted value

R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T
Ω 0.1	108	Ω 1.0	109	Ω 10	100	Ω 100	101	kΩ 1.0	102	kΩ 10	103	kΩ 100	104	MΩ 1.0	105	MΩ 10	106	MΩ 100	107
0.15	158	1.5	159	15	150	150	151	1.5	152	15	153	150	154	1.5	155	15	156	150	157

COLOR	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	GOLD	SILVER	NO COLOR
1st color band	0	1	2	3	4	5	6	7	8	9			
2nd color band	0	1	2	3	4	5	6	7	8	9			
3rd color band	10^0	10^1	10^2	10^3	10^4	10^5	10^6				10^{-1}	10^{-2}	
4th color band											± 5 % (J)	± 10% (K)	± 20% (M)