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Service Dept.—50 Kamitoda, Toda-shi, Saitama, 335 Japan Tel: 0484-43-1111 Telex: J2962628 CLAFAC-J

clarion Service Manual

Published by Service Administration Section

HONDA MOTORCYCLE GENUINE CB TRANSCEIVER

Model JC-213H

(Genuine NO.08118—MN500)

Transmitter & Receiver Range :
26.965 ~ 27.405 MHz
Numbers of channels : 40 Ch

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

Antenna impedance : 50 ohms
Power supply voltage : DC13.8V (Negative ground)
Current consumption : Less than 2A

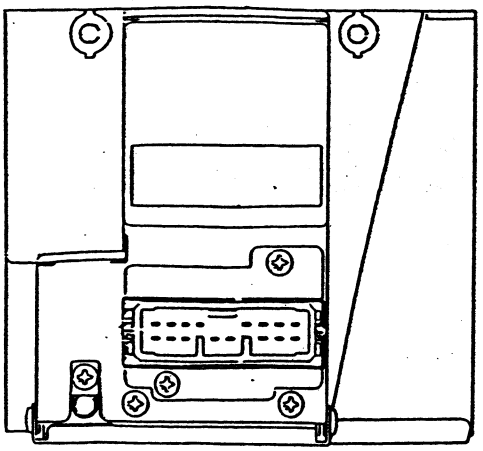
- Receiver
  - Quieting sensitivity: Better than 6 dBμ (at 10 dB S/N)
  - AGC Fom : More than 80 dB
  - Squelch sensitivity : Threshold, Less than 8 dBμ
    Tight, More than 25 dBμ
  - Selectivity : More than 50 dB
    50 dB (at ±10kHz detune)
- Transmitter
  - RF output : 4W max. at 13.8V
  - Modulation sensitivity : 70 ±10%
    at 120 mV Mic Input
  - Frequency tolerance: Less than ±0.005%

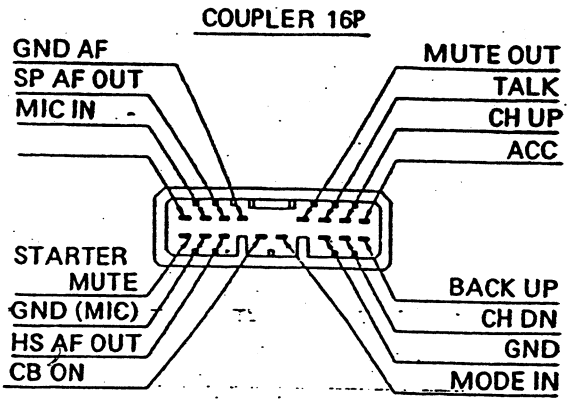
■COMPONENTS:

- JC-213H-51

Main Unit		1
Switch	013-3851-00	1
Noise suppressor	085-0280-00	1
Noise suppressor	085-0282-00	1
Noise suppressor	085-0283-00	1
Mounting bracket	300-7461-00	1
• Booklet bag	920-9728-01	1
Owner's guide	280-5253-00	1
Installation	284-4725-00	1
Pamphlet	295-0053-01	1
• Parts bag	921-8460-01	1
Hex-bolt	710-5018-30	1
Machine screw	714-5055-11	1
Machine screw	716-0796-00	2
Hex-nut	723-5000-20	1
Sems screw	732-6012-11	2
Flat washer	740-5000-11	1
Installation	284-4828-00	1

■REARVIEW AND CONNECTOR:

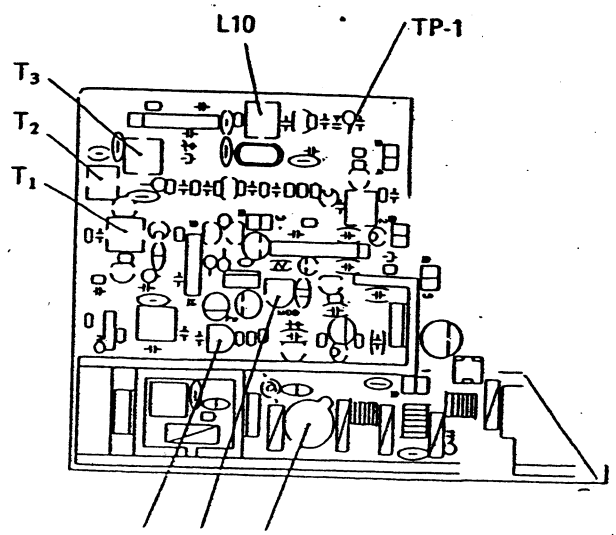




■ADJUSTINGS:

(1) Adjusting VCO
Set CB channel to CH1 and connect a DC voltmeter (Does not use circuit tester.) to TP-1.
Adjust L10 so that the voltmeter reading becomes 1.9 ±0.05V.

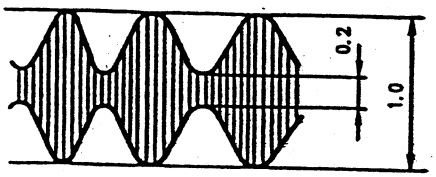
(2) Adjusting TX Amp
Set channel to CH20 and connect power meter to ANT. Adjust T_3, T_2, T_1 and L5 so that the power becomes maximum. (Adjust T_3, T_2, T_1 at least two times.)



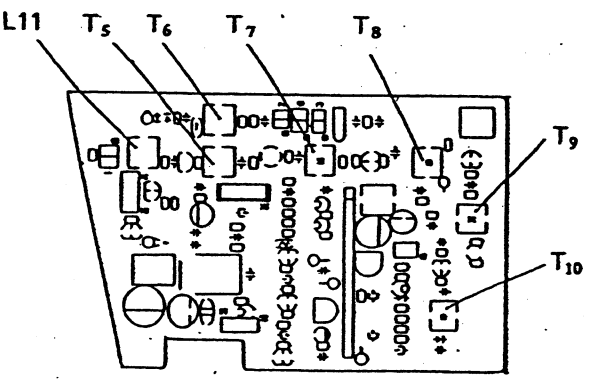
(3) Adjusting TX Power
For setting power, adjust the volume of VR1 so that the power meter indicates about 3.7W.

(4) Adjusting Modulation Circuit
Connect low frequency oscillator to microphone input (MIC-1). Set the oscillator's output to 1KHz, 120mV/600 ohms.
Adjust VR2 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.

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

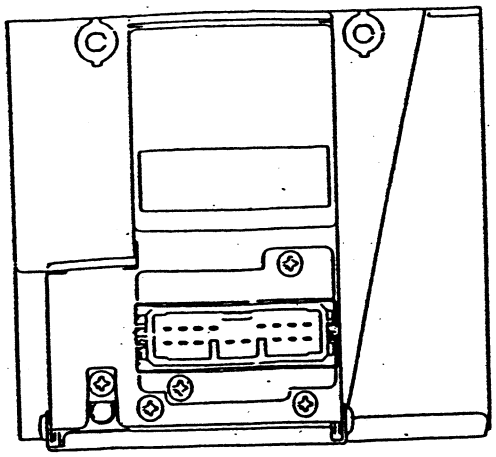


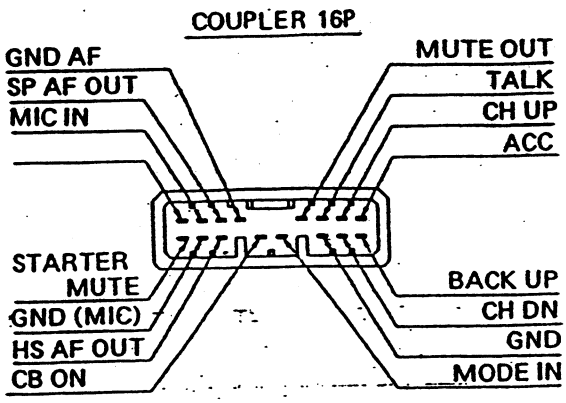
(5) Adjusting RX (Receiving Section)



Set channel to CH 20 (= 27.205 MHz) and connect SSG to ANT (Set SSG to 1 KHZ, 30% MOD).
Connect at AC voltmeter (or Synchroscope) to the audio output. Set volume control at half position.
Adjust L11, T_5 to T_{10} so that the audio output becomes maximum.
Decrease SSG output according to need.
(Adjust L11, T_5 to T_{10} at least two times.)

■REARVIEW AND CONNECTOR:





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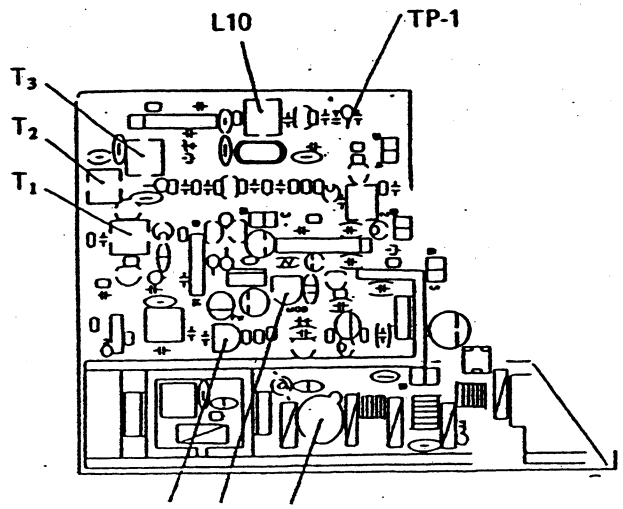

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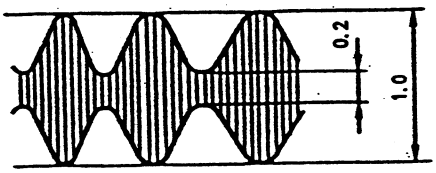
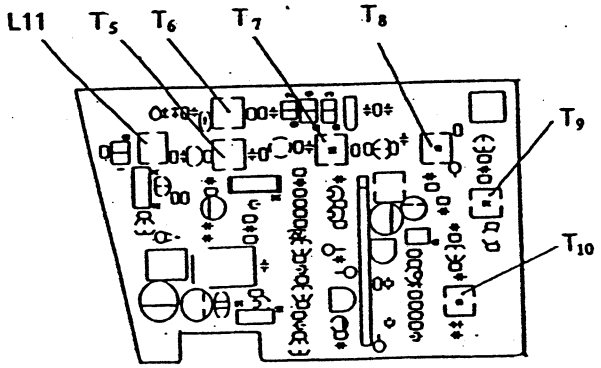


(5) Adjusting RX (Receiving Section)



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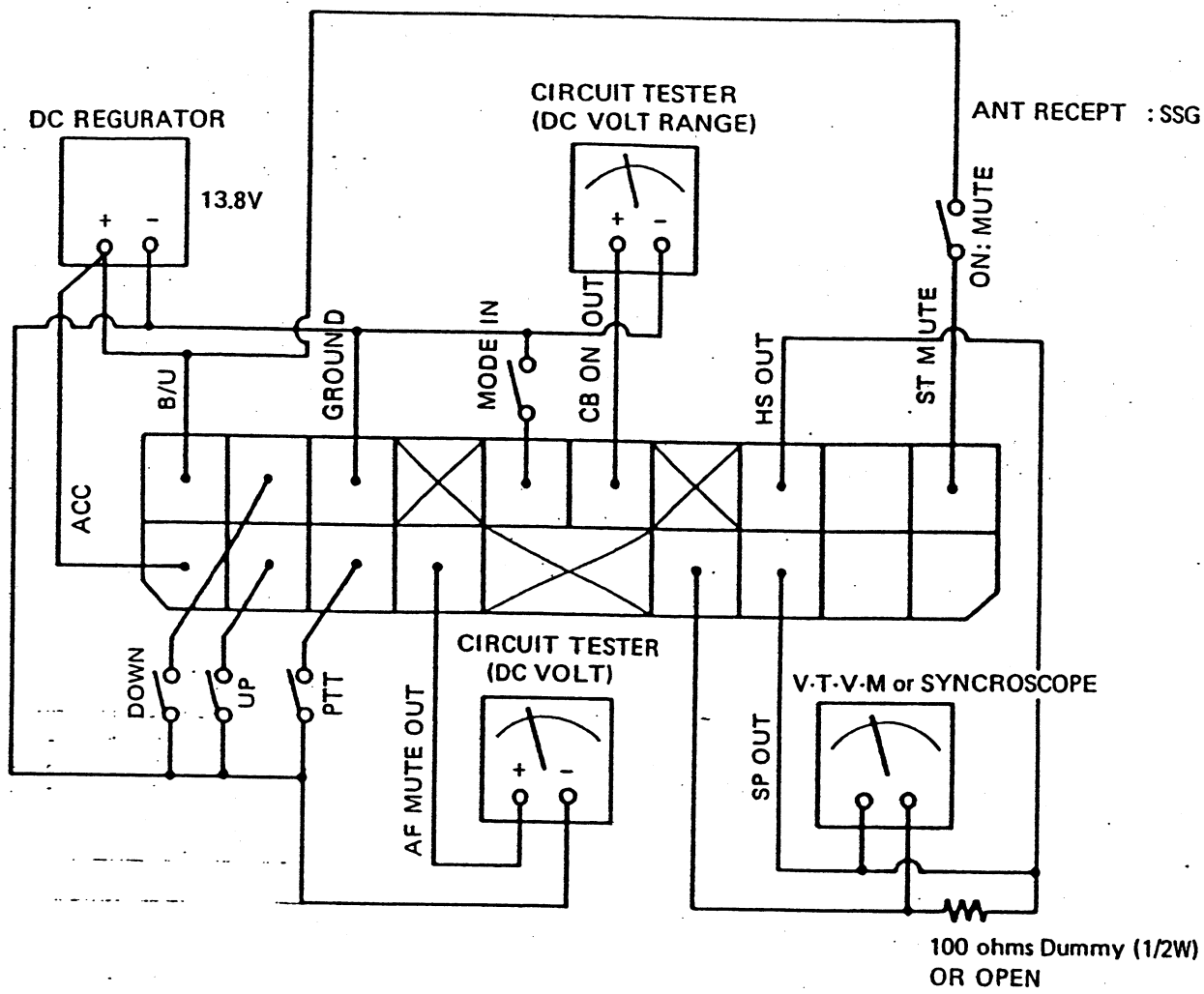
Connect at AC voltmeter (or Synchroscope) to the audio output. Set volume control at half position.
Adjust L11, T_5 to T_{10} so that the audio output becomes maximum.
Decrease SSG output according to need.
(Adjust L11, T_5 to T_{10} at least two times.)

■CONNECTION FOR ADJUSTMENT:

- RX SECTION



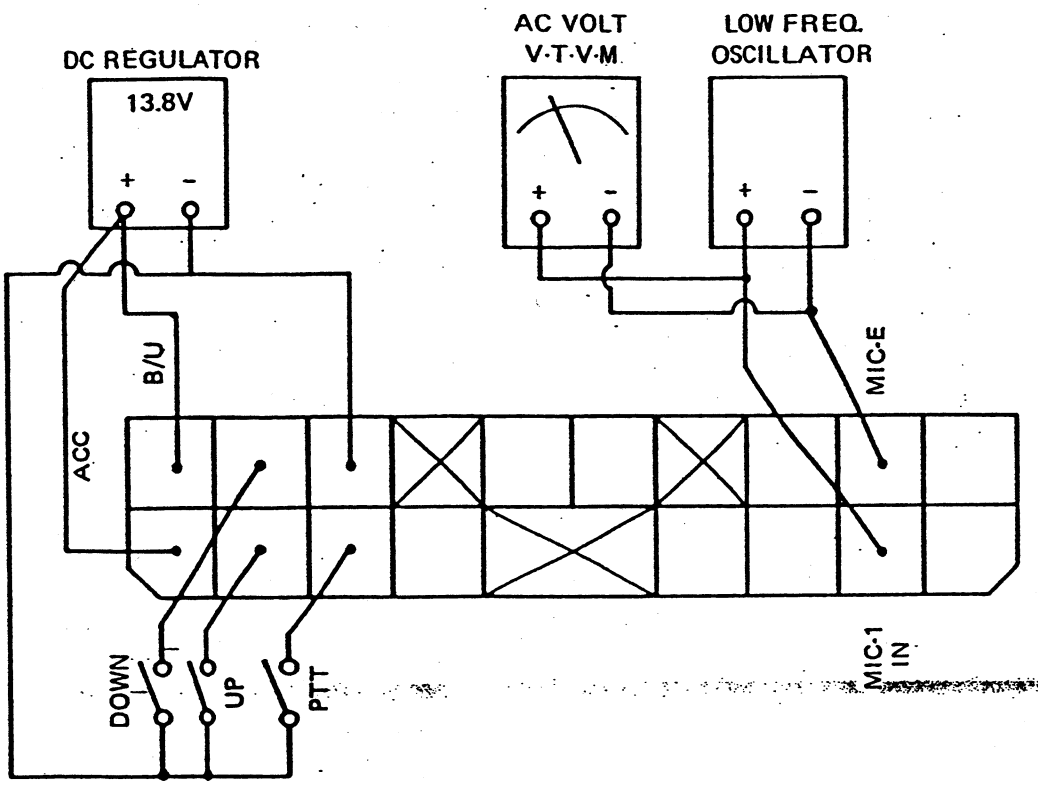
.[RADIO/CASSETTE I/O]

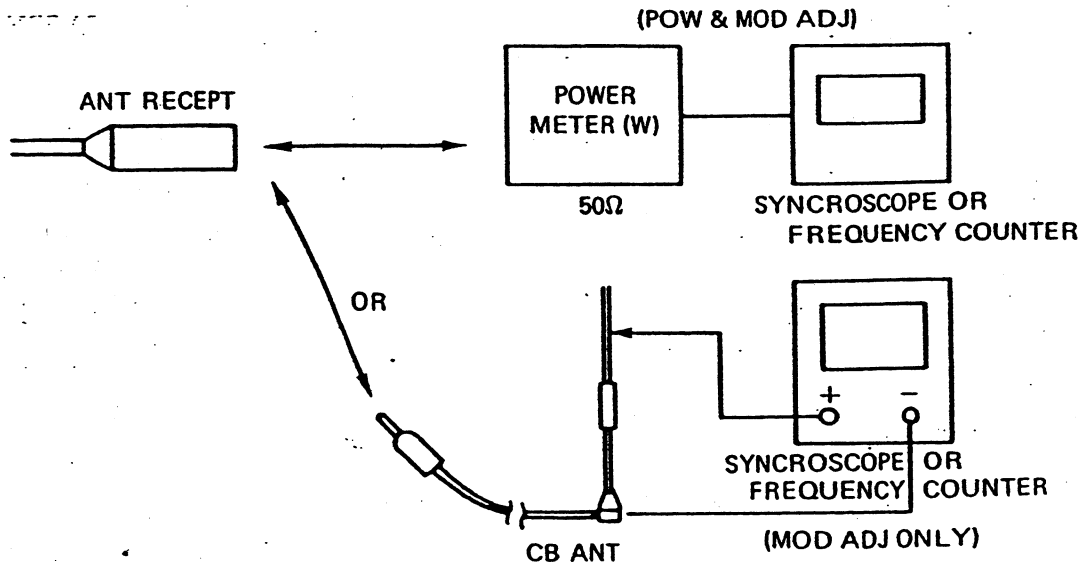
CB ON OUT FOR POWER AMP TO ON	CB POWER OFF				0V
	CB POWER ON				≒13.8V

AF MUTE OUT FOR RADIO/CAS	TX MODE	—			≒13.8V
	RX MODE	SQ CLOSED	—		0V
		SQ OPEN OR RECEIV-ING	CB HS MODE SELECT	RADIO HS MODE	≒13.8V
				RADIO SP MODE	0V
			CB SP MODE SELECT	RADIO HS MODE	0V
				RADIO SP MODE	≒13.8V

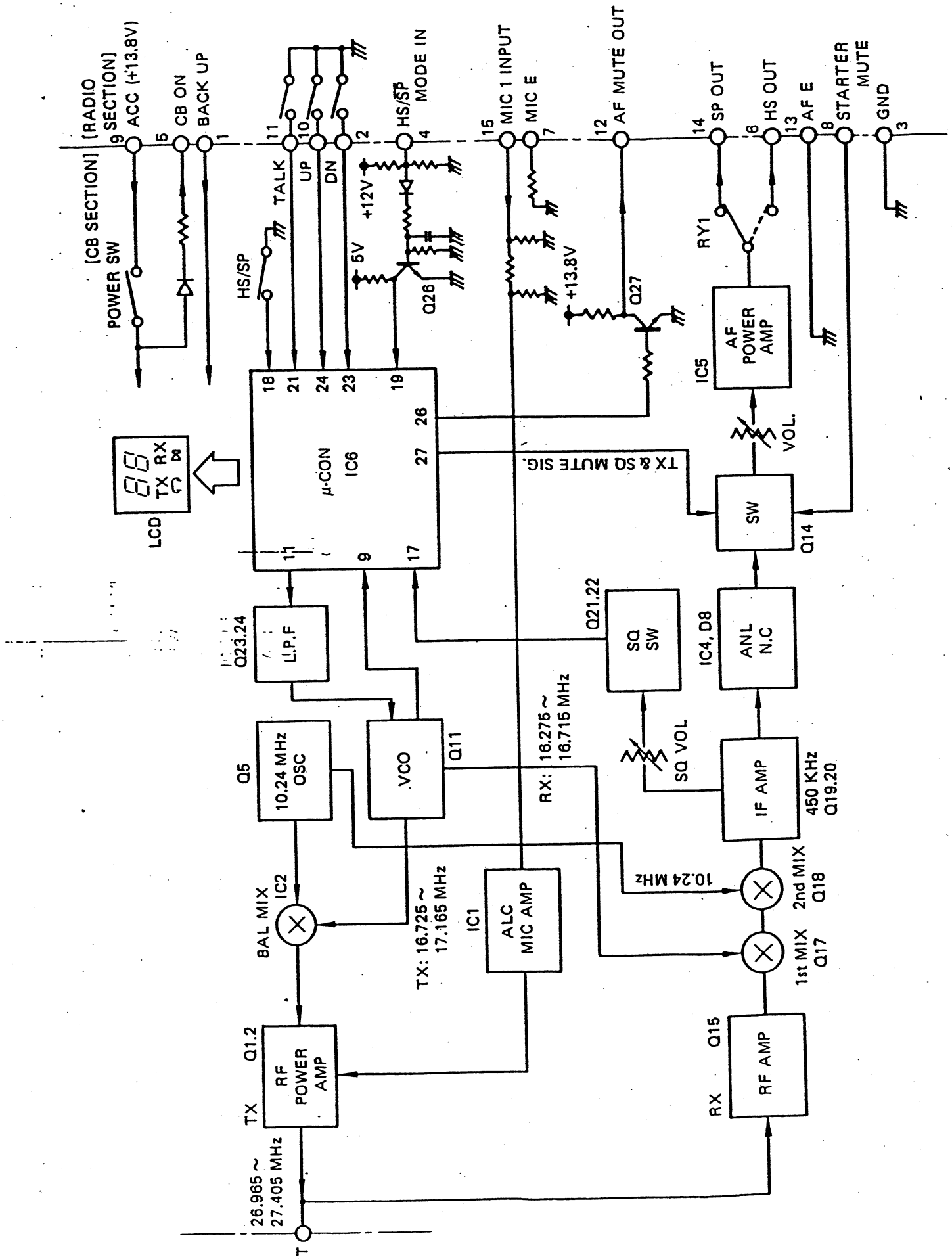
COMMENT: SQ CLOSED = RX INDICATOR OFF
SQ OPEN = RX INDICATOR ON
RADIO HS MODE = SAME MODE IN OPEN
RADIO SP MODE = SAME MODE IN SHORT (GROUND)

• TX SECTION


DC REGULATOR
13.8V
+
-
AC VOLT
V·T·V·M
LOW FREQ.
OSCILLATOR
B/U
ACC
MIC-E
MIC-1
IN
DOWN
UP
PTT


(POW & MOD ADJ)
ANT RECEPT
POWER
METER (W)
50Ω
SYNCROSCOPE OR
FREQUENCY COUNTER
OR
SYNCROSCOPE OR
FREQUENCY COUNTER
CB ANT
(MOD ADJ ONLY)

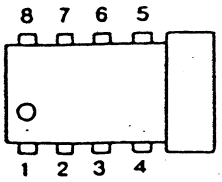
■BLOCK DIAGRAM

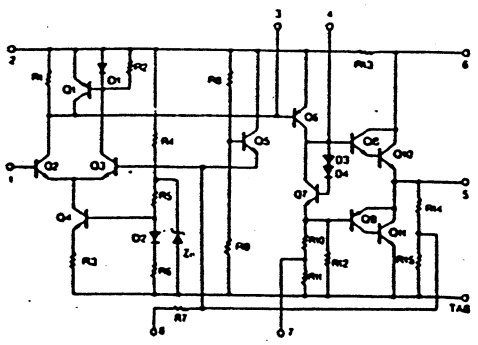


■EXPLANATION OF IC's:

Refer to description in IC service manual vol 2.			
TA78008AP	051-0624-00	3 Terminal Regulator	P50

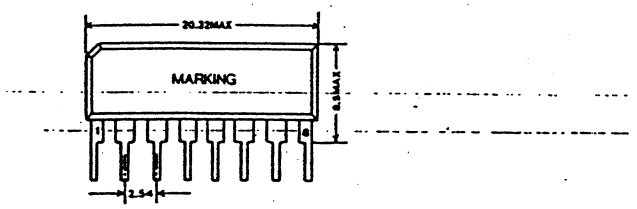
■μPC575C2 051-0303-00 Audio power amp.





■μPC1170H 051-0254-00 Pre Amplifier with ALC

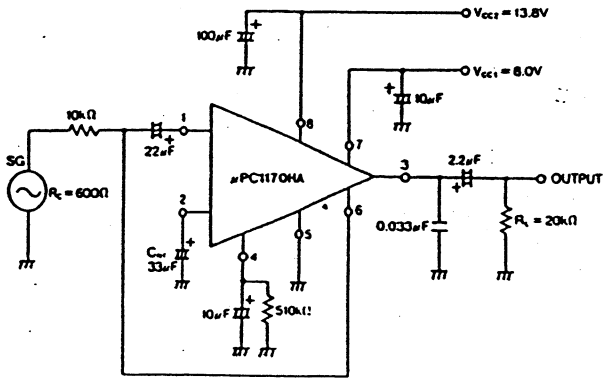
Outward Form



Absolute Maximum Ratings

Item	Symbol	Rating	Unit
Supply voltage 1	Vcc 1	12.0	V
Supply voltage 2	Vcc 2	18.0	V
Power dissipation	P_o	270	mW

Test Circuit

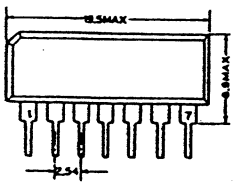


■μPC1037HA 051-0988-00 Bipolar Analog Integrated Circuit

Outline

The μPC1037H is a double balanced modulation circuit. It is most suitable for SSB modulation/demodulation. Because of its one-tip configuration the circuit is well-balanced and has good thermal stability. The μPC1037H is highly advantageous for packaging, needing a few attaching parts and using 7 pin Single In-line Package.

Outward Form



Connection Diagram

Terminal No.	Pin connection
1	Vcc
2	OUTPUT 1
3	OUTPUT 2
4	GND
5	SIGNAL INPUT
6	BYPASS
7	CARRIER INPUT

Features

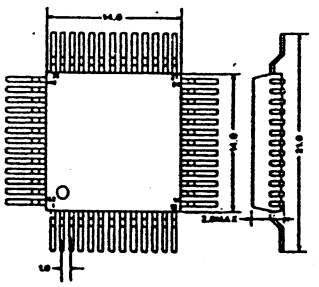
- oLess carrier and signal leaks.
- oLess intermodulation distortion.
- oSmaller carrier level required.
- oNo adjustments necessary because of fewer attaching parts.

Absolute Maximum Ratings (Ta=25°C)

Supply voltage	V_{cc}	9.0V
Power dissipation	P_o	270mW*
		*Ta=75°C

■μPD1720G-528-00 051-1009-00 AM Tuner Controller

Outward Form



Outline

The μPD1720G-528 is an IC developed for CB car radios.
Sending and receiving status of this IC is switched by toggle switch. The sending is made by N value in which 450kHz was added to the N value of the channel in receiving mode.
The channels are changed with the UP/DOWN momentary key.
The radio will hold the channel 9 when the emergency key is pressed. Channel changing is not possible during this mode. The emergency key has alternate switching function. When it is pressed again the function returns to the previously activated channel.
The channels range from ch 1 to ch 40.
The channels can only be changed during receiving mode

Features

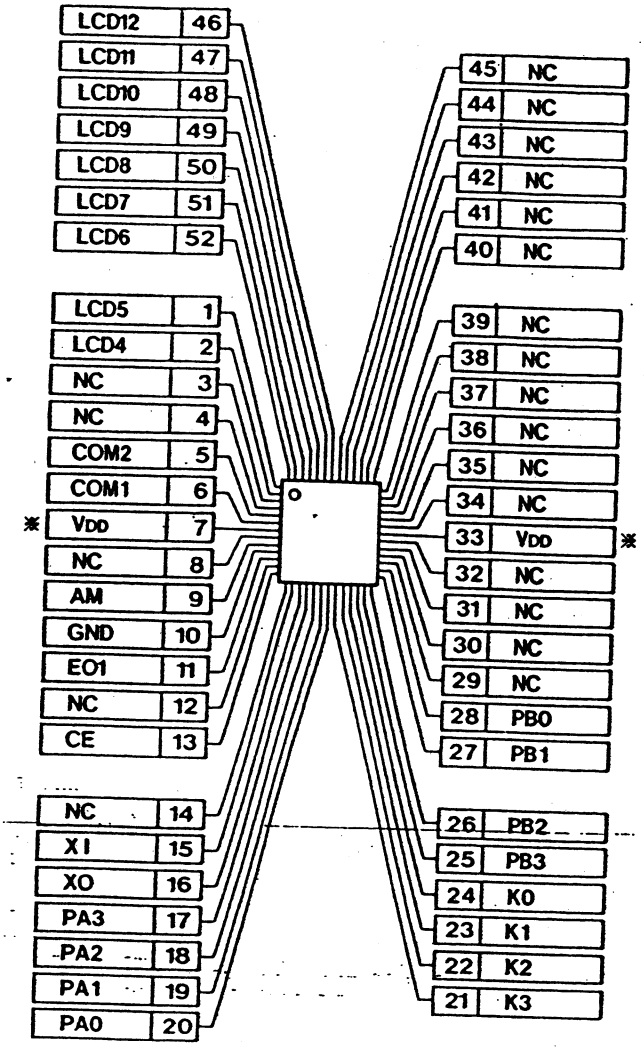
(1) 4 bit microprocessor for digital tuning.
(2) PLL and LCD driver installed.
(3) 5V ± 10% single power supply.
(4) Send/receive function by press-to-talk key.
(5) Manual tuning.
(6) Forced holding of the channel 9 by emergency key.
(7) Last channel memory.
(8) Headphone system/speaker.
(9) LCD display.

■PARTS LIST:

REF NO.	PART NO.	DESCRIPTION	Q'TY
D 3	001-0160-10	DIODE (1SV166S)	1
D 1, 5, 6, 7, 9, 10, 11, 12, 14, 16, 18, 19	001-0330-00	DIODE (1SS119)	12
D 4, 17,	001-0360-00	DIODE (S5566B)	2
D 8	001-0361-00	DIODE (1SS198)	1
D 15	001-0421-18 (001-0423-18) (001-0425-18)	DIODE (MTZ5.1J) DIODE (MA4051) DIODE (HZS5.1E)	1
D 2	001-0421-20	DIODE (MTZ6.2J)	1
TH 1	002-0186-00	THERMISTOR	1
TH 2	002-0190-00	THERMISTOR	1
T 8	005-0750-00	IF-TRANS FORMER	1
T 9	005-0752-00	IF-TRANS FORMER	1
T 10	005-0753-00	IF-TRANS FORMER	1
T 7	005-0761-00	IF-TRANS FORMER	1
T 4	005-0809-00	IF-TRANS FORMER	1
CF 2	005-0854-01	IF-TRANS FORMER	1
T 1, 2, 3, 5, 6	005-0922-00	IF-TRANS FORMER	5
CF 1	005-0967-00	IF-TRANS FORMER	1
CH 1	009-0603-00	CHOKE	1
L 5	010-1792-00	COIL	1
L 11	010-2039-00	COIL	1
L 1	010-2046-07	COIL	1
L 7	010-2046-24	COIL	1
L 9	010-2052-00	COIL	1
L 10	010-2156-00	COIL	1
L 8	010-2157-00	COIL	1
L 13	010-2158-00	COIL	1
L 2, 3, 4	010-2159-00	COIL	3
L 6	010-2160-00	COIL	1
VR 1	012-3808-05	VARIABLE-RESISTOR (4.7KΩ)	1
VR 2	012-3808-06	VARIABLE-RESISTOR (10KΩ)	1
VR 4	012-3808-08	VARIABLE-RESISTOR (33KΩ)	1
VR 3	012-3808-10	VARIABLE-RESISTOR (100KΩ)	1
RY 1	014-0519-00	RELAY	1
IC 4	051-0190-00	IC (CZ2)	1
IC 1	051-0254-00	IC (μPC1170H)	1
IC 5	051-0303-00	IC (μPC575C2)	1
IC 3	051-0624-00	IC (TA78008AP)	1
IC 2	051-0988-00	IC (μPC1037HA)	1
IC 6	051-1009-00	IC (μPD1720G-528-00)	1
X 2	061-1054-00	CRYSTAL (4.5MHZ)	1
X 1	061-1070-00	CRYSTAL (10.24MHZ)	1
Q 6	100-0473-25	TRANSISTOR (2SA473Y)	1
Q 7	100-0817-15	TRANSISTOR (2SA817-O)	1
Q 9	100-1048-00	TRANSISTOR (2SA1048-O,Y,GR)	1
Q 1	102-1945-00	TRANSISTOR (2SC1945)	1
Q 8	102-1959-25	TRANSISTOR (2SC1959Y)	1
Q 3	102-2086-00	TRANSISTOR (2SC2086)	1
Q 2	102-2166-00	TRANSISTOR (2SC2166)	1
Q 10, 13, 16, 21, 22, 25, 26, 27	102-2458-00	TRANSISTOR (2SC2458-Y,GR,BL)	8
Q 4, 5, 12, 18, 19, 20	102-2668-25 (102-2668-15) (102-2786-12)	TRANSISTOR (2SC2668Y) TRANSISTOR (2SC2668O) TRANSISTOR (2SC2786LF)	6
Q 24	102-2785-60	TRANSISTOR (2SC2785-HFEK)	1
Q 14	103-1504-00	TRANSISTOR (2SD1504-D,E)	1
Q 11, 15	108-0193-12	TRANSISTOR (2SK193LF)	2
Q 23	108-0363-00	TRANSISTOR (2SK363GRBLV)	1
Q 17	124-0069-28	TRANSISTOR (3SK59NEW-GR)	1
R 38	111-3301-81	FILM-R (1/2W 33Ω)	1

REF NO.	PART NO.	DESCRIPTION	Q'TY
C 3	144-1212-10	MICA-CAPACITOR (120PF)	1
C 13	144-1812-10	MICA-CAPACITOR (180PF)	1
C 6, 8	144-2712-10	MICA-CAPACITOR (270PF)	2
C 4	144-3312-10	MICA-CAPACITOR (330PF)	1
C 7, 11	144-4712-10	MICA-CAPACITOR (470PF)	2
C 116	160-1012-05	CERAMIC-CAPACITOR (100PFB)	1
C 60, 61, 62, 67, 71, 84, 94, 95, 96, 101, 102	160-1022-05	CERAMIC-CAPACITOR (1000PF)	11
C 9, 16	160-1512-05	CERAMIC-CAPACITOR (150PFB)	2
C 24	160-1812-05	CERAMIC-CAPACITOR (180PFB)	1
C 10	160-8212-05	CERAMIC-CAPACITOR (820PFB)	1
C 14, 16, 18, 22, 31, 40, 48, 49, 66, 72, 74, 91, 97, 99	171-1032-06	CERAMIC-CAPACITOR 0.01μF SR	14
C 90	171-1042-06	CERAMIC-CAPACITOR 0.1μF SR	1
C 66, 107,	171-1532-06	CERAMIC-CAPACITOR 0.015μF SR	2
C 42, 43, 47, 75, 76, 78, 79, 81	171-2232-06	CERAMIC-CAPACITOR 0.022μF SR	8
C 114	171-2732-06	CERAMIC-CAPACITOR 0.027μF SR	1
C 54	171-3322-06	CERAMIC-CAPACITOR 0.0033μF SR	1
C 12, 68, 80, 83, 108, 109, 111,	171-4732-06	CERAMIC-CAPACITOR 0.047μF SR	7
C 63	172-2242-20	POLYESTOR-CAPACITOR 0.22μF	1
C 28, 119	173-1022-10	POLYESTER-CAPACITOR 0.001μF	2
C 35	173-3332-10	POLYESTER-CAPACITOR 0.033μF	1
C 37	173-4722-10	POLYESTER-CAPACITOR 0.0047μF	1
C 1, 26, 30	173-4732-10	POLYESTER-CAPACITOR 0.047μF	3
C 20	174-1000-13	CERAMIC-CAPACITOR 10PF CH	1
C 21, 45	174-1017-13	CERAMIC-CAPACITOR 100PF CH	2
C 41	174-1090-13	CERAMIC-CAPACITOR 1PF CH	1
C 73	174-1507-13	CERAMIC-CAPACITOR 15PF CH	1
C 70	174-2090-13	CERAMIC-CAPACITOR 2PF CH	1
C 103, 118	174-2200-13	CERAMIC-CAPACITOR 22PF CH	2
C 92, 93	174-2207-13	CERAMIC-CAPACITOR 22PF CH	2
C 25	174-2700-13	CERAMIC-CAPACITOR 27PF CH	1
C 19, 46	174-3090-13	CERAMIC-CAPACITOR 3PF CH	2
C 77	174-3307-13	CERAMIC-CAPACITOR (33PF CH)	1
C 60	174-3907-13	CERAMIC-CAPACITOR (39PF CH)	1
C 5, 17	174-4700-13	CERAMIC-CAPACITOR (47PF CH)	2
C 44	174-4707-57	CERAMIC-CAPACITOR (47PF UH)	1
C 23	174-5607-13	CERAMIC-CAPACITOR (56PF CH)	1
C 2	174-7090-13	CERAMIC-CAPACITOR (7PF CH)	1
C 34, 53, 110	042-0176-00	ELECTROLYTIC-CAPACITOR (16V 10μF TAN)	3
C 82	042-0199-01	ELECTROLYTIC-CAPACITOR (10V 22μF TAN)	1
C 36	042-0200-00	ELECTROLYTIC-CAPACITOR (10V 47μF TAN)	1
C 27	042-0226-00	ELECTROLYTIC-CAPACITOR (35V 0.1μF TAN)	1
C 59, 87	042-0227-00	ELECTROLYTIC-CAPACITOR (16V 2.2μF TAN)	2
C 85	042-0230-00	ELECTROLYTIC-CAPACITOR (35V 0.47μF TAN)	1
C 113	179-1073-32	ELECTROLYTIC-CAPACITOR (16V 100μF)	1
C 98	179-1083-13	ELECTROLYTIC-CAPACITOR (6.3V 1000μF)	1
C 100	179-1083-33	ELECTROLYTIC-CAPACITOR (16V 1000μF)	1
C 29, 32, 86, 104, 115	179-2273-23	ELECTROLYTIC-CAPACITOR (10V 220μF)	5
C 62, 112	179-3373-33	ELECTROLYTIC-CAPACITOR (16V 330μF)	2
C 64	179-4773-23	ELECTROLYTIC CAPACITOR (10V 470μF)	1
C 65	179-4773-33	ELECTROLYTIC-CAPACITOR (16V 470μF)	1
C 38, 55, 57, 58	182-1053-69	ELECTROLYTIC-CAPACITOR (50V 1μF)	4
C 39, 55, 88	182-1063-32	ELECTROLYTIC-CAPACITOR (16V 10μF)	3
C 105	182-2253-62	ELECTROLYTIC-CAPACITOR (50V 2.2μF)	1
C 33	182-2253-63	ELECTROLYTIC-CAPACITOR (50V 2.2μF)	1
C 89	182-4756-32	ELECTROLYTIC-CAPACITOR (16V 4.7μF NP)	1
C 106	182-4763-32	ELECTROLYTIC CAPACITOR (16V 47μF)	1

Terminal Connection



※Pins 7 and 33 is internally connected.

Terminal Description

Pin No.	Symbol	Terminal name	Function
1 ~ 2 46 ~ 52	LCD4 ~ LCD5 LCD12 ~ LCD6	LCD SEGMENT OUTPUTS	Terminals for segment signal output to the LCD panel. Display by matrix of COM1 and COM2. The signals are output to these terminal by LCDD command. The contents of the random address in the data memory (RAM) designated at the first operand part of the LCDD command are output on the LCD matrix digit which is specified at the second operand part. If an even digit is specified, the contents of data memory designated at the first operand part are output to these terminals via segment PLA (Programmable Logic Array). The segment PLA consists of 20 patterns. Note: When the power supply is switched on (VDD LOW → HIGH), LOW LEVEL (display OFF mode) is automatically output.
3 ~ 4 36 ~ 45	LCD2 ~ LCD3 LCD23 ~ LCD13		Not in use.
5 6	COM2 COM1	LCD COMMON OUTPUTS	Terminals for common signal output to the LCD panel. Display pattern consists of a 36 dot matrix for LCD2–LCD23. Three values of GND, 1/2 VDD and VDD (intervals of 5ms) are output at a cycle of 50Hz. The segment in which the ±VDD potential difference is generated between these terminals and LCD2–LCD23 will light. Note: When the power supply is switched on, LOW LEVEL (display OFF mode) is automatically output.
7 33	VDD	POWER SUPPLY	Device power terminals that supply 5V±10% during the device operation. The power can be selectively supplied to No. 7 or No. 33 terminal.
8 14	NC	NO-CONNECTION	Not in use.
35 29 ~ 32 34	NC		Not in use.
9	AM	AM LOCAL OSCILLATION SIGNAL INPUT	Inputs local oscillation and an output (VCO output) from 0.6 to 50MHz (min. 0.3Vp-p). This terminal is selected and activated by direct division or pulse swallow method when HF command is executed. Notice that in the above two methods the upper frequency limit (which can be input) and the lower limit of the dividing ratio are not the same.

Dividing method	Input voltage(min)	Input frequency
Direct method	0.1Vp-p	0.59–20MHz
Pulse swallow (HF command executed)	0.1Vp-p 0.3Vp-p	0.6–40MHz 0.6–50MHz

10	GND	GROUND	Device ground terminal.
11	EO1	ERROR OUTPUTS	Terminals for PLL error output. HIGH LEVEL is output from these terminals when the divided local oscillation frequency (VCO output) is higher than the standard frequency. LOW LEVEL is output when the divided local oscillation frequency is lower than the standard frequency. When the divided local oscillation frequency matches the standard frequency, it becomes Floating. This output is input to the external LPF (Low Pass Filter) and subsequently applied to the varactor diode Either terminal can be selected because the wave forms output to EO1 and EO2 are equal
12	EO2		Not in use.
13	CE	CHIP ENABLE	Terminal for selection signal input of the device When the device is operated normally, HIGH LEVEL is output When the device is not used LOW LEVEL is output. When this terminal is in LOW LEVEL, PLL is in forbidden status, i.e DISABLE status However, input of 134μs or lower will not be accepted When the CE terminal is changed from LOW LEVEL to HIGH LEVEL, the device is reset and the program starts from address 0 The I/O port (port A) will switch to input mode

Pin No.	Symbol	Terminal name	Function
15 16	XI XO	X'TAL	Connection terminal for crystal oscillator. Allows connection of 4.5MHz crystal. Adjust the oscillation frequency by observing XO terminal.
		Port A	4 bit I/O (Input/Output) port. Input and output can be specified bit by bit with this port. This is done with the contents of address 1FH in the data memory (RAM) called PA IO WORD.
17	PA3	SQ IN INPUT	Input port to output to SQ OUT and AF MUTE 1.
18	PA2	HS/SP KEY INPUT	Input port to switch H/S OUT (PB3).
19	PA1	MODEIN INPUT	Input port to output to AF MUTE 1.
20	PA0	R/T OUT OUTPUT	Outputs HIGH LEVEL while the PLL is locked during sending mode. Outputs LOW LEVEL during unlocked and receiving modes.
21 I 24	K3 I K0	KEY RETURN SIGNAL INPUT	4 bit input ports. Usually used as input of the key matrix. When KIN command is executed, the status of this terminal is read into the data memory (RAM) specified at the respective operand part. The upper 2 bits of port B and port C (PC3 and PC2) are especially used as a signal source for key return, usable constitution.
		Port B	4 bit output port. Because of the smaller sink power supply, this port is used as a key return signal source of the key matrix. In other words, by using this port as a key return signal source the external diode can be omitted. Note: When this port is used as a normal output port, LOW LEVEL might not be output properly in some circuits to be driven due to the small sink power supply. In that case, connect the pull-down resistor.
25	PB3	H/S OUT	Output by HS/SP key input (PA2) with alternate switching. LCD "SP" is displayed during HIGH LEVEL output, and LCD "HS" is displayed during LOW LEVEL output.
26	PB2	AF MUTE1	MUTE output port. The MUTE signal is output in each port status of P.TALK (K3), SQ OUT (PB1), H/S OUT (PB3) and MODE IN (PA1).
27	PB1	SQ OUT	Outputs LOW LEVEL when the SQ IN (PA3) input is in LOW.LEVEL. Outputs HIGH LEVEL when the SQ IN input is in HIGH LEVEL and when the P.TALK key (K3) is in LOW LEVEL.
28	PB0	AF MUTE2	MUTE output port. Upon power supply startup and when the CHIP ENABLE rises from LOW to HIGH, the MUTE signal is output for approx. 50 msec. after startup, and the PLL signal is output (approx. 450 msec. in total) in order to suppress the noise. When the PLL signal is output, the MUTE is output for approx. 50 msec. before and approx. 375 msec. after PLL output (approx. 70 msec. in total). When the H/S OUT output is switched over, the MUTE signal is likewise output for approx. 50 msec. before and approx. 375 msec. after the PLL output (approx. 70 msec. in total). MUTE is output during UP/DOWN fast forward.

Key Matrix

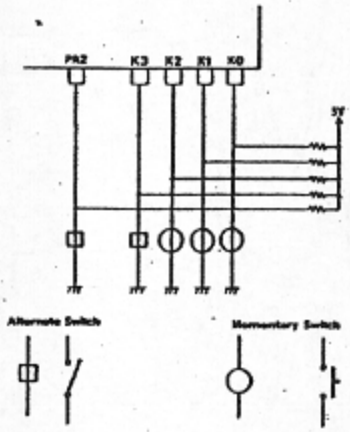
Key Matrix Connection Table

K3	K2	K1	K0
P.TALK	CH-9	DOWN	UP

PA2
HS/SP

: Momentary SW

: Alternate switch



Alternate Switch

Symbol	Function
P.TALK	Sending/receiving switch-over. Switches to sending mode during LOW LEVEL. As channel change cannot be made during this mode, the sending is made with the channel which was operated before switch-over. The N value (in which 5 AH was added during receiving mode of the channel) is output and switched to sending mode. When the PLL is locked after the N value was output, TX is displayed. During the sending mode, other keys than P.TALK key are not accepted except HS/SP key. When the LEVEL is switched from LOW to HIGH, the mode switches to receiving. The N value, from which 5 AH was subtracted, returns to original value of the channel during receiving. Channels can be changed during receiving mode. When SQ OUT is in HIGH LEVEL during receiving mode, RX is displayed.
HS/SP	The HS/SP key changes output to H/S OUT (PB3) in order to switch over the headphone system and speaker. When the H/S key (PA2) is in HIGH LEVEL, HIGH LEVEL is output from the HS OUT (PB3) and switches to SP mode. When the HS/SP key is in LOW LEVEL, LOW LEVEL is output from the HS OUT and switches to HS mode.

Momentary SW

Symbol	Function
CH-9	This emergency key will hold the emergency channel 9. The channel changing is not possible during this mode. When the key is pressed again, it returns to the previously activated channel. This key is not accepted during sending mode.
UP/ DOWN	Channel UP/DOWN key. Each time the key is pressed the channels are moved up (UP key ON) or down (DOWN key ON) one at a time. When the key is held down for longer than 1 second, the channels move rapidly at a rate of approx. 6 channels/sec. When the UP key is pressed at the highest channel frequency, the upward channel seek continues at the lowest frequency. When the DOWN key is pressed at the lowest channel frequency, the downward channel seek continues at the highest frequency and the saw-tooth-wave tuning is made. In this mode, the last key pressed has the priority. However, this is not accepted when two keys are pressed simultaneously. When the P.TALK switches from HIGH to LOW LEVEL during fast channel seek, the UP/DOWN stops immediately. When the emergency key is pressed during fast channel seek, the channel at that time is saved and channel 9 is held.