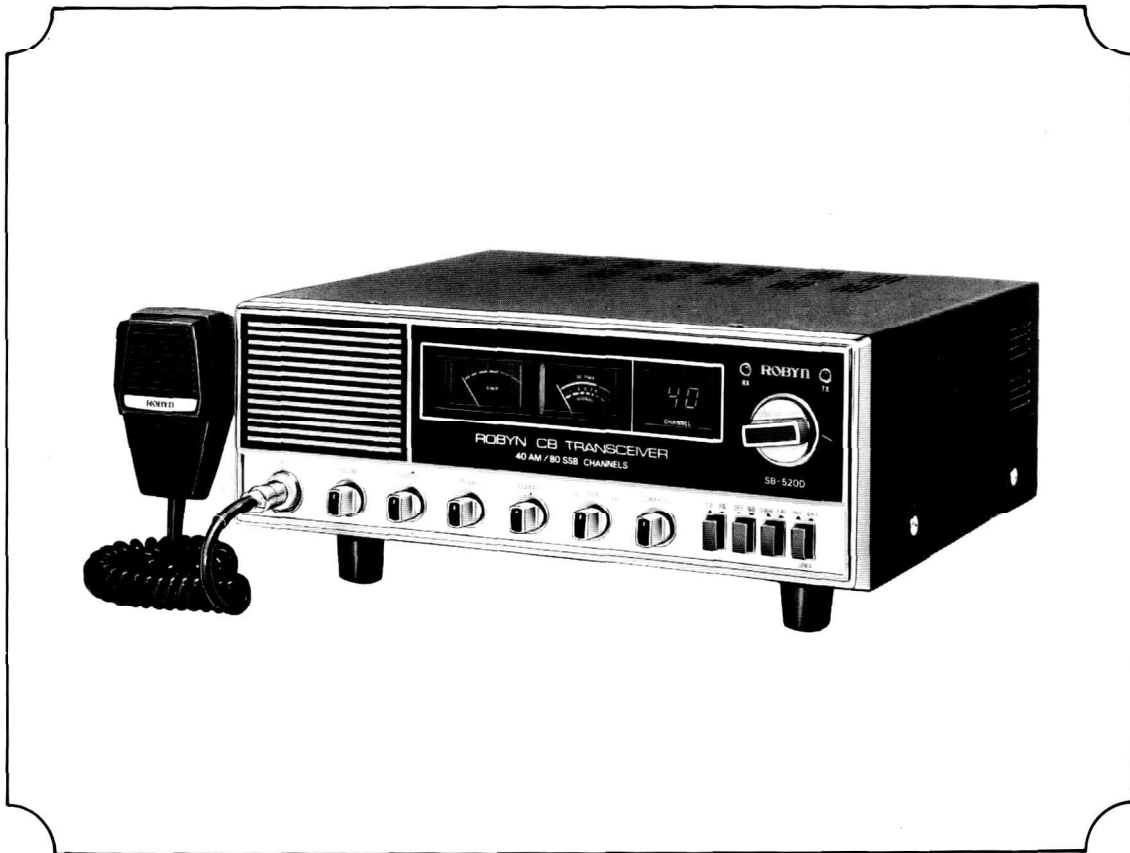


INSTRUCTION MANUAL FOR

SB-520D 40-CHANNEL

CITIZENS BAND SOLID STATE AM/SSB BASE STATION TRANSCEIVER



ROBYN INTERNATIONAL INC.
10901 NORTHLAND DRIVE
ROCKFORD, MI 49341



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INTRODUCTION

FREQUENCY RANGE

The SB-520D provides high level, trouble-free performance in the Citizen Radio Service which is comprised of the following frequency assignment.

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

These frequency are generated and accurately controlled by a phase lock loop(PLL) circuit ensuring high reliability and excellent frequency stability on the above channel.

To obtain maximum performance from your SB-520D, please read carefully the following description and operating instruction.

FEDERAL COMMUNICATIONS COMMISSION REQUIREMENTS

1. Operation of this equipment requires a valid Station License issued by the Federal Communications Commission.
DO NOT TRANSMIT WITH YOUR EQUIPMENT UNTIL YOU HAVE RECEIVED YOUR LICENSE. ILLEGAL OPERATION CAN RESULT IN SEVERE PENALTIES.
2. You are required to read and understand Part 95 of the F.C.C. rules and regulations prior to operation of this unit.
3. You are also required to complete F.C.C. Form 505 and submit it to the F.C.C. GETTYSBURG, PA. 17326 in order to receive your license.
You may use Form 555-B as a temporary permit while your regular Form 505 application is being processed by the F.C.C.
4. If you install or service your own transceiver, do not attempt to make any transmitter tuning adjustment other than those supplied by the manufacturer.

6. Replacement or substitution, of crystal, transistor, regular diodes or any other parts of a unique nature, with parts other than those recommended by Robyn, may cause violation of FCC regulation part 95.
7. For your use and convenience, FCC Form 555-B, 505 and a copy of Part 95 of the Commissions Rules are packed with this transceiver.
8. As part of your station records, you are also required to maintain a current copy of Part 95 of the FCC Rules.
Copies of Part 95 are available from the superintendent of documents, GPO, Washington, D.C. 20402.

SPECIFICATIONS

GENERAL

Channels:	40 AM, 40 LSB, 40 USB
Frequency Range:	26.965 to 27.405 MHz
Frequency Control:	Phase Lock Loop(PLL) synthesizer
Frequency Tolerance:	0.005%
Operating Temperature Range:	-20°C to +50°C
Microphone:	Plug-in type: dynamic, 600 ohms
Input Voltage:	13.8V DC nom. (positive or negative ground) and 117V AC
Size:	330 (mm) x 127 (mm) x 292 (mm)
Weight:	13.3 Pounds (6 kg)
Antenna Connector	S0239
Semiconductors	48 transistors, 7 FET, 7 IC, 62 Diodes, 3 LEDs.
Meter:	Illuminated; indicates relative output, signal strength and standing wave ratio

TRANSMITTER

Power output	4 watts (AM) 12 watts PEP (SSB)
Frequency Response	300 – 2500 Hz
Output Impedance	50 ohms unbalanced
Output Indicator	TX indicator

RECEIVER

Sensitivity:	less than 0.5 μ V for 10 dB (S+N) /N
Selectivity:	AM 65dB (10 KHz), SSB 65dB (10 KHz)
Image Rejection:	50 dB
Adjacent-Channel Rejection:	60 dB
I.F. Frequencies:	AM and SSB: 7.8 MHz
Squelch:	Adjustable; threshold less than 1 μ V
Clarifier Range:	\pm 1250 Hz
Audio output power:	3.5 watts into 8 ohms
Frequency Response:	350 to 2500 Hz
Distortion:	less than 10% at 3.5 watts output
Built-in-Speaker:	8 ohms, round

PA SYSTEM

Output power:	3.5 watts into external speaker
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INSTALLATION

BASE STATION INSTALLATION

For base station operation, simply plug into AC outlet and connect the antenna to the antenna terminal on the back of the unit.

MOBILE STATION INSTALLATION

Plan the location of the transceiver and microphone bracket before starting the installation. Select a location that is convenient and does not interfere with the driver or passengers in the vehicle.

In automobiles, the transceiver is usually mounted below the dash panel, with the microphone bracket beside it.

ANTENNA INSTALLATION

For base station operation, any Citizen Band beam, dipole, ground plane or vertical antenna may be used. A ground plane type will provide greater coverage and since it is essentially non-directional, it is ideal in base station to mobile operation. From base station to base station, or point to point operation, a directional beam will give greater distance even under adverse condition. The range of the transceiver depends basically on the height of the antenna and whenever possible, select the highest location within FCC limits.

Generally a minimum of lead-in cable should be used due to the line losses. However, a desirable antenna may justify the loss in longer cable runs.

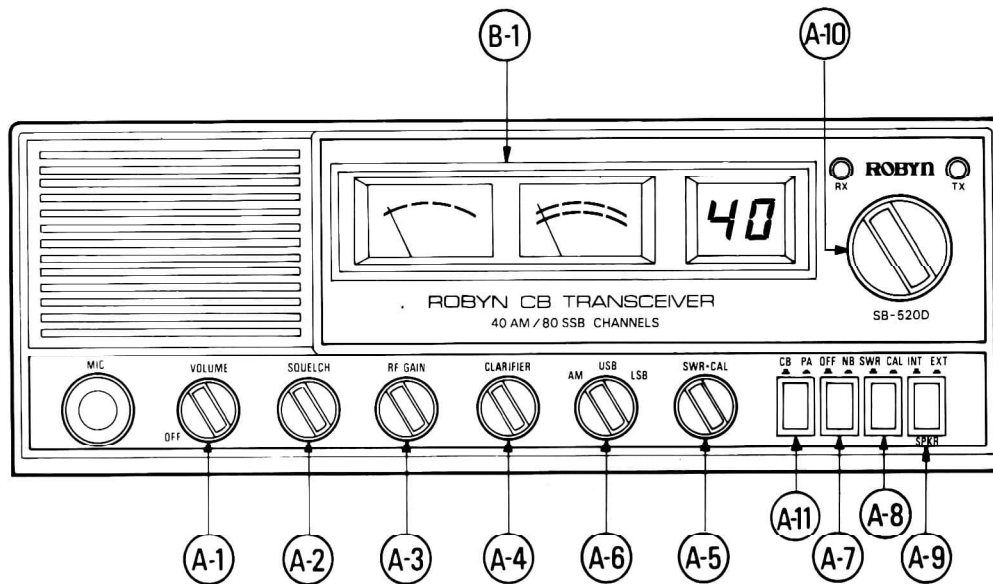
MOBILE ANTENNA:

A vertical whip antenna is best suited for mobile use. A non-directional antenna should be used for best results in any case. The base loaded whip antenna will normally provide effective communication.

For greater range and more reliable operation, a full quarter wave whip should be used.

Either of these antenna, use the metal car body as a ground plane and shield of the base lead as well as the metal case of the transceiver should be grounded. A standard antenna connector (type SO 239) is provided on the transceiver for easy connection to a standard PL-259 cable antenna.

OPERATING INSTRUCTIONS



A – CONTROL FUNCTIONS

- 1. OFF/ON/VOLUME:** Turn clockwise to apply power to the unit and to set the desired listening level.
- 2. SQUELCH:** This control is used to cut off or eliminate receiver background noise in the absence of an incoming signal. For maximum receiver sensitivity the control should be adjusted only to the point where the receiver background noise or ambient background noise is eliminated. Turn fully counterclockwise then slowly clockwise until receiver noise disappears. Any signal to be received must now be slightly stronger than the average received noise. Further clockwise rotation will increase the threshold level which a signal must overcome in order to be heard. Only strong signals will be heard at the maximum clockwise setting.
- 3. RF GAIN:** Adjust as required to optimize signal. This control is used primarily to optimize reception in strong signal areas. Gain is reduced by counterclockwise rotation of the control.
- 4. CLARIFIER:** Allows a slight variation of receiver frequency above and below the actual channel frequency. This operation is similar to fine tuning control and while it is primarily intended for SSB operation, it also allows precise adjustment in the AM mode. The setting of this control is somewhat critical in the SSB mode and if it is not properly adjusted the signal received will be distorted.
- 5. SWR CAL CONTROL:** In order for you to achieve maximum radiated power and longest range, it is important that your antenna be in good condition properly adjusted and matched to your transceiver. The built-in SWR(standing wave ratio) meter lets you easily measure your antenna condition. To operate this function connect your antenna to the transceiver antenna output connector. Select a channel near the middle of the band such as 21, or the channel you plan to use most frequently. Turn the power on and set the meter function switch to the CAL position. Press and hold the microphone push to-talk button using the SWR CAL

control, adjust the meter to read the CAL position indicated on the meter face. Then, without releasing the microphone button, switch to the SWR position, and read the SWR indicated.

The lower the figure the better with 1 being ideal. Generally speaking reading up to 3 are acceptable, but over 3 indicates that are losing radiated power and antenna adjustment may be advisable.

6. **MODE SWITCH:** This switch enable the operator to select the mode of operation, upper(USB) or lower(LSB) sideband or AM. The switch changes both the transmitter and the receiver.
7. **NB-OFF SWITCH:** When the switch is placed in the NB position the RF noise blanker is activated. The RF noise blanker is very effective for repetitive impulse noise such as ignition interference.
8. **SWR CAL SWITCH:** See No. 5.
9. **EXT SP/INTNL SP SWITCH:** In EXT SP position, internal speaker is disconnected and sound come out from external speaker.
10. **CHANNEL SELECTOR SWITCH:** This switch selects any one of the forty Citizens Band channels desired. The selected channel is shown by large LED in the channel window to enable you a direct reading. Channel 10 thru 15 and 23 may be used for communication between stations operating under different license where all other channels, except channel 9, may be used only between units operating under the same license. Channel 9 has been reserved by the FCC for emergency communications involving the immediate safety of life of individuals or immediate protection of property. Channel 9 may also be used to render assistance to a motorist.
11. **PA/CB SWITCH:** Selects the mode of operation. In the CB position, the PA function is disabled and the unit will transmit and receive on the selected frequency. The PA function should not be used unless a PA speaker is connected. To use this PA features, a speaker having a voice coil impedance of 8 ohms and a power handling capability of at least 4 watts should be used.

B. INDICATOR FUNCTION

1. **S/RF PWR SWR METER:** Shows relative transmitter RF output power, input signal strength when receiving and standing wave ratio (SWR) as described in 5 above. The meters are illuminated when power is on.

C. PRESS TO TALK MICROPHONE

The receiver and transmitter are controlled by the press-to-talk switch on the microphone. Press the switch and the transmitter is activated. Release the switch to receive. When transmitting hold the microphone about three inches from your mouth and speak clearly in a normal voice. The radio comes complete with the low impedance dynamic microphone.

D. OPERATING PROCEDURE TO RECEIVE

1. Place CB-PA switch to CB position.
2. Turn the unit ON by turning the VOLUME control clockwise, until a click is heard.
NOTE: Microphone must be plugged in for receiver to operate.
3. Set the VOLUME control for a comfortable listening level.
4. Listen to the background noise from the speaker. Turn the SQUELCH control slowly clockwise until the noise just disappears. The SQUELCH is now properly adjusted. The receiver will remain quiet until a signal is actually received. Do not advance the control too far, or some of the weaker signals will not be heard.
5. Set the channel selector switch to the desired channel.

E. OPERATING PROCEDURE TO TRANSMIT

1. Select the desired channel of transmission.
2. If the channel is clear, depress the push-to-talk switch on the microphone and speak in a normal voice.

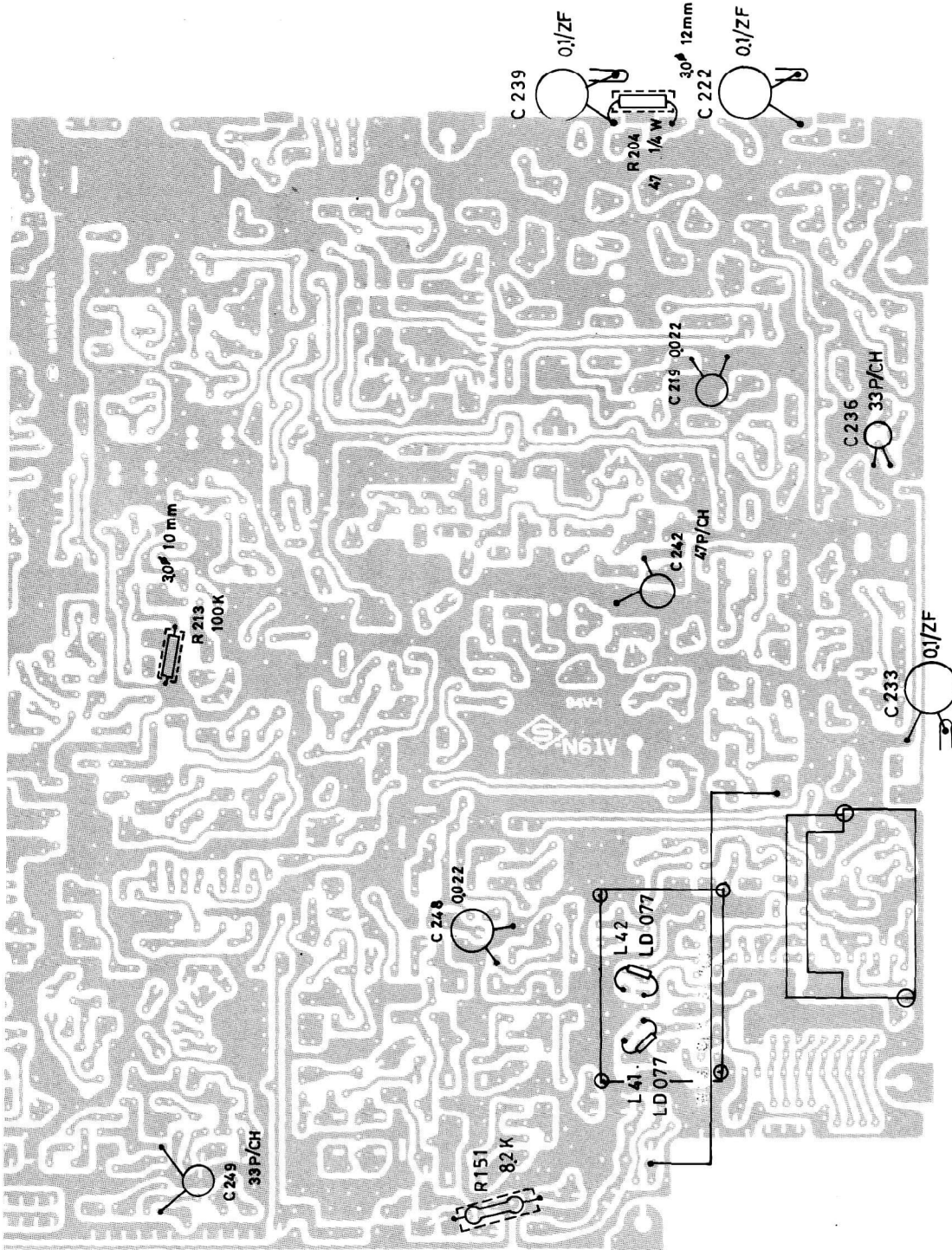
Public Address

An external 8 ohms, 4 watts speaker must be connected to the PA SPKR, jack located on the rear panel when the transceiver is used as a public address system. The speaker should be directed away from the microphone to prevent acoustic feedback. Physical separation or isolation of the microphone and speaker is important when operating the PA at high output levels.

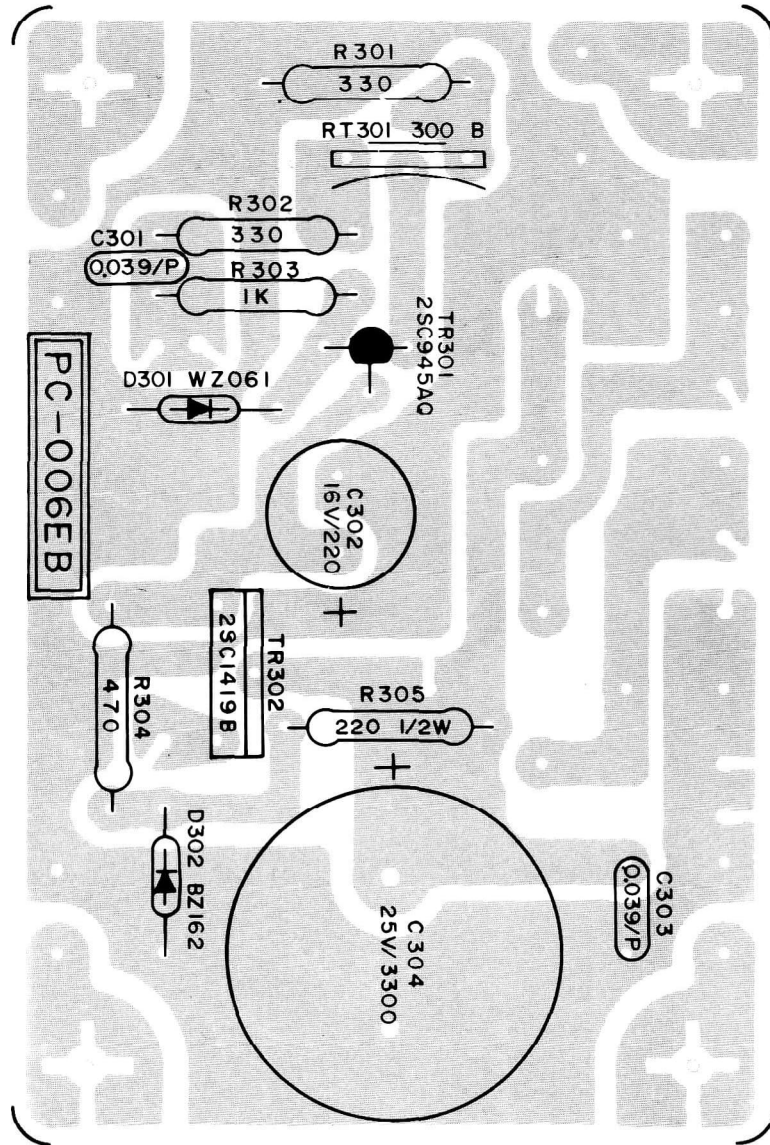
Remote Speaker

The external speaker jack (EXT. SPKR) on the rear panel is used for remote receiver monitoring. The external speaker should have 8 ohms impedance and be able to handle at least 3 watts. When the external speaker is plugged in, the internal speaker is disconnected.

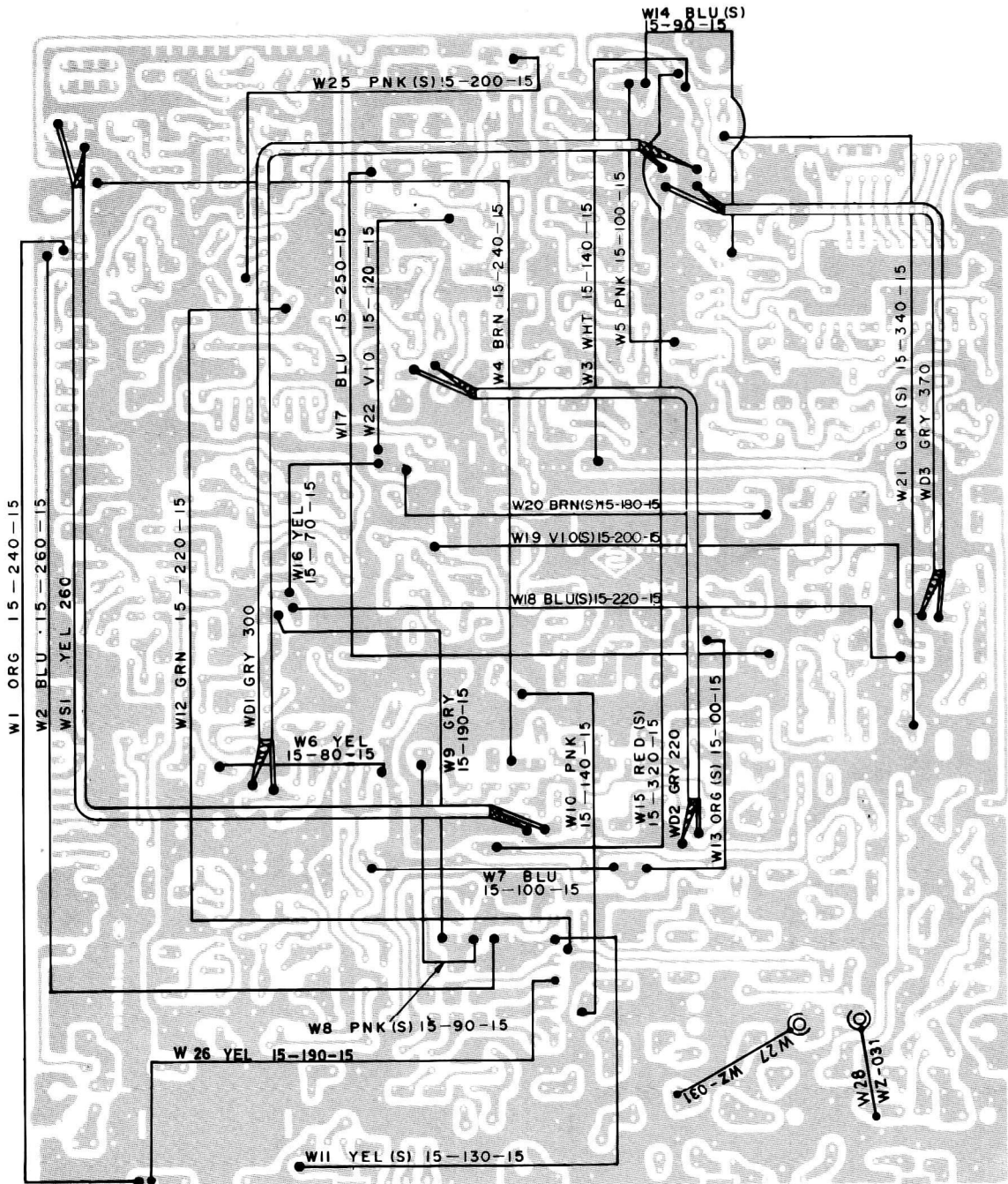
PARTS LAYOUT: MAIN BOARD (REAR VIEW)



REGULATOR BOARD (TOP VIEW)



WIRING DIAGRAM



WARRANTY

This unit is sold under an exclusive 90 days warranty, which warrants it to be free from defects in material and workmanship. We agree to repair or replace at the point of manufacture, without charge, all parts showing such defects, provided the unit is delivered to us, intact for our examination, with all transportation charges prepaid to our factory, within 90 days from the date of sale to the original purchaser, and provided such examination discloses in our final judgment, that it is thus defective.

This warranty does not apply if the Receiver has been subjected to misuse, neglect, accidents, incorrect wiring not our own, improper installation, or put to use in violation of instructions furnished by us, nor to Receivers that have been damaged by lightning, excess current, repaired or altered outside our factory, nor to the Receiver that has had its serial number altered or removed.

CHANGES

The Company reserves the right to modify or change the equipment, in whole or in part, at any time prior to delivery in order to include refinements deemed appropriate by the Company, but without incurring any liability to modify or change any equipment previously delivered, or to supply new equipment in accordance with earlier specifications.

ROBYN INTERNATIONAL INC.

10901 NORTHLAND DRIVE
ROCKFORD, MI 49341



Printed in Japan

CIRCUIT SYMBOL	DESCRIPTION	PART NO.
R-113	Metal Film Resistor,	RSJZ 106805
R-180,181	Metal Film Resistor,	RSJZ 101015
R-108	Carbon Film Resistor,	RPBZ 121814
R-109,114	Carbon Film Resistor,	RPBZ 121825
R-305	Carbon Film Resistor,	RPBZ 122114
R-197	Carbon Film Resistor,	RPBZ 143304
R-204	Carbon Film Resistor,	RPBZ 144704
R-205	Carbon Film Resistor,	RPBZ 144714
R-216	Carbon Film Resistor,	RUBZ 148224
R-208	Carbon Film Resistor,	RUBZ 148224
R-206	Carbon Film Resistor,	RUBZ 145694
R-29	Carbon Film Resistor,	RUBZ 142214
R-20	Carbon Film Resistor,	RUBZ 141524
R-209	Carbon Film Resistor,	RUBZ 142224
R-80	Carbon Film Resistor,	RUBZ 144724
R-143,155	Carbon Film Resistor,	RUBZ 145624
R-150	Carbon Film Resistor,	RUBZ 143334
R-93	Carbon Film Resistor,	RUBZ 145634
R-15,207	Carbon Film Resistor,	RUBZ 182214
R-301,302	Carbon Film Resistor,	RPBZ 183314
R-304	Carbon Film Resistor,	RPBZ 184714
R-95	Carbon Film Resistor,	RPBZ 185614
R-126	Carbon Film Resistor,	RPBZ 188214
R-303	Carbon Film Resistor,	RPBZ 182014
R-151	Carbon Film Resistor,	RPBZ 188224
R-213	Carbon Film Resistor,	RPBZ 181044
R-97,182,186	Carbon Film Resistor, (12.5m/m)	RPFZ 181004
R-179,199	Carbon Film Resistor, (12.5m/m)	RPFZ 181904
R-25	Carbon Resistor, (12.5m/m)	RPFZ 184704
R-63	Carbon Resistor, (12.5m/m)	RPFZ 185604
R-105	Carbon Resistor, (12.5m/m)	RPFZ 186804
R-22,118,119,132,168,169,189	Carbon Resistor, (12.5m/m)	RPFZ 181014
R-32	Carbon Resistor, (12.5m/m)	RPFZ 181514
R-1,33,52,60,65,67,71,74,94,131,141,142,154,188,196	Carbon Resistor, (12.5m/m)	RPFZ 182214
R-46,183	Carbon Resistor, (12.5m/m)	RPFZ 183314
R-111	Carbon Resistor, (12.5m/m)	RPFZ 183914
R-17,28,36,72,110,125,200	Carbon Resistor, (12.5m/m)	RPFZ 184714
R-95	Carbon Resistor, (12.5m/m)	RPFZ 185614
R-86,176,177	Carbon Resistor, (12.5m/m)	RPFZ 182724
R-3,12,14,55,69,86,100,123,133,145,157,159,165,184,185,202	Carbon Resistor, (12.5m/m)	RPFZ 188214
R-13,19,21,23,44,46,127,128,130,139,140,173	Carbon Resistor, (12.5m/m)	RPFZ 183324
R-10,83,146,92,96,135,187,116	Carbon Resistor, (12.5m/m)	RPFZ 184724
R-9,64,90,91,101,162,117	Carbon Resistor, (12.5m/m)	RPFZ 185624
R-4,11,27,45,121,137,138,163,212,37	Carbon Resistor, (12.5m/m)	RPFZ 188224
R-175	Carbon Resistor, (12.5m/m)	RPFZ 188224
R-2,16,24,48,49,54,57,61,64,70,76,81,87,89,98,122,144,152,156,164,167,171,192,193,201,47	Carbon Resistor, (12.5m/m)	RF2Z 181034
R-149,158	Carbon Resistor, (12.5m/m)	RF2Z 181534
R-6,26,104,136,172	Carbon Resistor, (12.5m/m)	RF2Z 182234
R-78,147	Carbon Resistor, (12.5m/m)	RF2Z 183334
R-99	Carbon Resistor, (12.5m/m)	RF2Z 183334
R-30,148	Carbon Resistor, (12.5m/m)	RF2Z 184734
R-82,106,170,194,195,42	Carbon Resistor, (12.5m/m)	RF2Z 185634
R-53	Carbon Resistor, (12.5m/m)	RF2Z 186834
R-5,35,58,75,155	Carbon Resistor, (12.5m/m)	RF2Z 181044
R-191,124	Carbon Resistor, (12.5m/m)	RF2Z 181544
R-34,40,50,73	Carbon Resistor, (12.5m/m)	RF2Z 182244
R-88	Carbon Resistor, (12.5m/m)	RF2Z 182244
R-39	Carbon Resistor, (12.5m/m)	RF2Z 184744
R-43,38	Carbon Resistor, (12.5m/m)	RF2Z 184744
R-160	Carbon Resistor, (12.5m/m)	RF2Z 186244
R-3	Carbon Resistor, (12.5m/m)	RF2Z 182254
CAPACITORS		
C-304	Electrolytic Condenser,	3300µF 25V
C-179	Tantalum Condenser	2.2µF 25V M
C-140,141	Tantalum Condenser	10µF 6.3V M
C-77,78,79	Electrolytic Condenser,	0.47µF 50V
C-35,58,84,98,126,58,199	Electrolytic Condenser,	1µF 50V
C-55,211	Electrolytic Condenser,	22µF 25V
C-44,67,68,88,97,218	Electrolytic Condenser,	4.7µF 25V
C-42,43,63,69,87,99,120	Electrolytic Condenser,	10µF 16V
C-14	Electrolytic Condenser,	33µF 10V
C-89,92	Electrolytic Condenser,	33µF 16V
C-47,49,50,59,66,76	Electrolytic Condenser,	47µF 10V
C-101	Electrolytic Condenser,	100µF 10V
C-102,135	Electrolytic Condenser,	220µF 10V
C-81,302	Electrolytic Condenser,	220µF 16V
C-104	Electrolytic Condenser,	330µF 10V
C-103	Electrolytic Condenser,	470µF 10V
C-95	Electrolytic Condenser,	470µF 16V
C-94,107	Electrolytic Condenser,	1000µF 16V
C-39,52,60,110	Solid Alumina Condenser,	0.1µF 16V M
C-17,83,131,200,201,210,240	Mylar Condenser	0.01µF 50V K
C-23,51,71,72,86,80	Mylar Condenser	0.022µF 50V K
C-18,25,26,27,29,30,31,40,64,85,121,57,194,198,301,303	Mylar Condenser	0.039µF 50V K
C-61,62,82,153,231,401	Mylar Condenser	0.047µF 50V K
C-71	Mylar Condenser	0.069µF 50V K
C-73,75,133,134,175,91,96,169,188	Mylar Condenser	0.1µF 50V K
C-168	Ceramic Condenser,	0.5pF 50V C CH
C-155,117	Ceramic Condenser,	1pF 50V C CH
C-30,36	Ceramic Condenser,	5pF 50V C CH
C-143	Ceramic Condenser,	7pF 50V D CH

CIRCUIT SYMBOL

DESCRIPTION

CAPACITORS (Continued)

PART NO.

C-116,130,139,150,154,37	Ceramic Capacitor	1.5pF	50V	D	CH	.....	CCZ 811004
C-111,112	Ceramic Capacitor	18pF	50V	J	CH	.....	CCZ 811804
C-90	Ceramic Capacitor	22pF	50V	J	CH	.....	CCZ 812204
C-54,236,249	Ceramic Capacitor	33pF	50V	J	CH	.....	CCZ 813304
C-1,163	Ceramic Capacitor	39pF	50V	J	CH	.....	CCZ 813904
C-45,122,123,242	Ceramic Capacitor	47pF	50V	J	CH	.....	CCZ 814704
C-174,176,24	Ceramic Capacitor	56pF	50V	J	CH	.....	CCZ 815604
C-93,142,164	Ceramic Capacitor	68pF	50V	J	CH	.....	CCZ 816804
C-115	Ceramic Capacitor	100pF	50V	K	CH	.....	CCZ 811015
C-184	Ceramic Capacitor	120pF	50V	K	CH	.....	CCZ 811215
C-173	Ceramic Capacitor	180pF	50V	K	CH	.....	CCZ 811815
C-163	Ceramic Capacitor	220pF	50V	K	CH	.....	CCZ 812215
C-8	Ceramic Capacitor	100pF	50V	K	SL	.....	CGZ 811015
C-128,137,148	Ceramic Capacitor	220pF	50V	K	SL	.....	CGZ 812215
C-125	Ceramic Capacitor	270pF	50V	K	SL	.....	CGZ 812715
C-127,136,147	Ceramic Capacitor	470pF	50V	SL	.....	.....	CGZ 814715
C-38	Ceramic Capacitor	330pF	50V	K	UJ	.....	CGZ 813315
C-167	Ceramic Capacitor	390pF	50V	K	UJ	.....	CGZ 813915
C-170	Ceramic Capacitor	470pF	50V	K	UJ	.....	CGZ 814715
C-7,9,113,114,405,406,408,415,416	Ceramic Capacitor	0.001µF	50V	K-B	.....	.....	CRZ 811025
C-10,11,12,13,159,130,161,162,166,172,177,178,183,185,186,187,189,413,414	Ceramic Capacitor	0.0047µF	50V	K-B	.....	.....	CRZ 814725
C-2,4,5,6,15,16,46,53,124,129,138,149,151,152,150,192,195,204,205,207,208,209,214,403,404,419,420	Ceramic Capacitor	0.01µF	50V	K-B	.....	.....	CRZ 811035
C-19,20,21,22,28,33,34,41,57,100,105,106,109,118,146,156,191,196,197,202,203,206,215,216,217,219,220,221,223,227,228,417,248	Ceramic Capacitor	0.022µF	50V	K-B	.....	.....	CRZ 812235
C-213,222,233,239,418	Ceramic Capacitor	0.1µF	50V	Z	Z-F	.....	CKZ 81104C
CT-1,2,3,4,5,6	Trimmer Capacitor	CV-028	20P	.....	.....	.....	CVY 028004
CC-1,2	Composit Parts	HA-003	.....	.....	.....	.....	HHA Y003001
RR-1	Composit Parts	HA-004	.....	.....	.....	.....	HHA Y004001

CRYSTALS

X-1	Crystal	7.8025MHZ	.....	.....	.....	.....	QX Y017001
X-2	Crystal	7.975MHZ	.....	.....	.....	.....	QX Y054001
X-3	Crystal	11.2858MHZ	.....	.....	.....	.....	QX Y081003
X-4	Crystal	11.2842MHZ	.....	.....	.....	.....	QX Y081001
X-5	Crystal	10.24MHZ	.....	.....	.....	.....	QX Y080001
X-6	Crystal	11.2850MHZ	.....	.....	.....	.....	QX Y081002

MISCELLANEOUS

FT-1	Crystal Filter	FL-001	.....	.....	.....	.....	FLY 00100
FT-2	Crystal Filter	FL-046	.....	.....	.....	.....	FLY 04600
S-402	Rotary Switch	SR-168	.....	.....	.....	.....	SRY 16800

CIRCUIT SYMBOL

DESCRIPTION

MISCELLANEOUS (Continued)

PART NO.

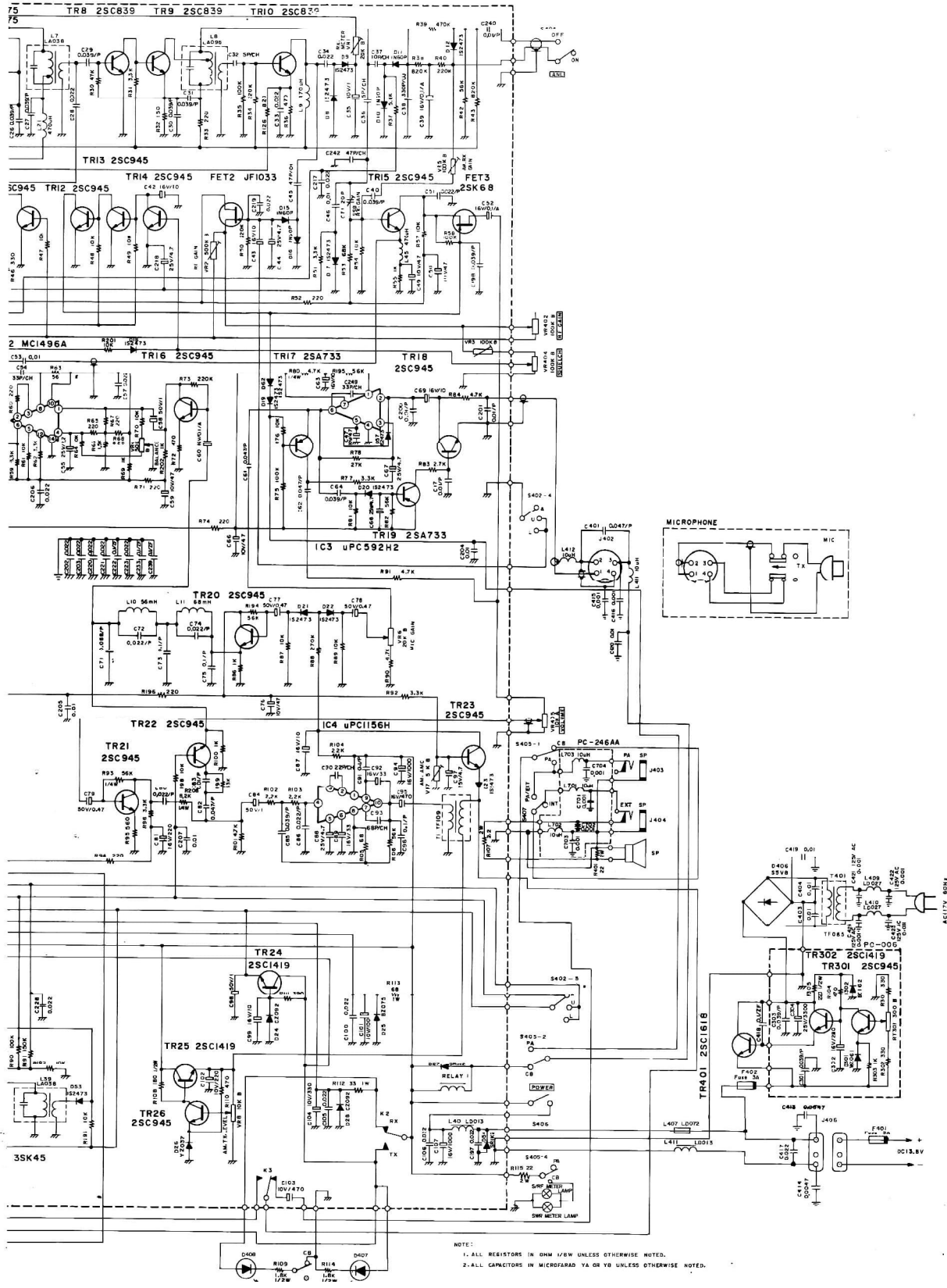
S-408	Rotary Switch	SR-156	.....	.....	.....	.....	SSRY 156001
	Speaker	SW-088	.....	.....	.....	.....	SSWY 088001
	Metre	SP-030	.....	.....	.....	.....	SPY 030001
M-401	Relay	MT-111	S/R	.....	.....	.....	ZMTY 112001
RL-1	Relay	RL-023	.....	.....	.....	.....	ZRLY 023001
	Microphone	MK-063	.....	.....	.....	.....	AMKY 063001
PL-401,402	Pilot Lamp	PL-065	.....	.....	.....	.....	VPLY 065001
J-401	Antenna Connector	JK-068	.....	.....	.....	.....	JJKY 068001
J-402	Jack	JK-088	.....	.....	.....	.....	JJKY 088001
J-403,404	Jack	JK-085	.....	.....	.....	.....	JJKY 085001
J-406	Jack	JK-073 (TX.RX INDICATOR)	40(mm Red White	.....	.....	.....	JJKY 073001
	Crystal Socket	SK-001	.....	.....	.....	.....	ISKY 001001
	Relay Socket	SK-018	.....	.....	.....	.....	JSKY 018001
	Test Terminal	TP-019	.....	.....	.....	.....	JTPY 019001
	Test Terminal	TP-027	.....	.....	.....	.....	JTPY 027001
TP-5,6,7,8,9	Lug Board	TP-013	.....	.....	.....	.....	JTPY 013005
2-0-1	Lug Board	TP-014	.....	.....	.....	.....	JTPY 014006
2-0-2	Fuse Holder	FH-009	.....	.....	.....	.....	ZFHY 009001
3A	Fuse	FS-001	.....	.....	.....	.....	ZFSY 001006
2SC-1618	Insulation Board	YD-003-002	.....	.....	.....	.....	ZYDY 003002
2SC-1419	Insulation Board	YD-003-003	.....	.....	.....	.....	ZYDY 003001
2SC-1618	Insulation Bush	YD-004-001	.....	.....	.....	.....	ZYDY 004001
2SC-1156H	Mylar Insulation	YD-034-001	.....	.....	.....	.....	ZYDY 034001
2SC-1973	Heat Sink Fin	YD-035	.....	.....	.....	.....	ZYDY 035001
	Cap Connector	YD-008	.....	.....	.....	.....	ZYDY 008001
	Square Button	YY-010	.....	.....	.....	.....	ZYY 010001
	Wire Crimper	YY-023	.....	.....	.....	.....	ZYY 023001
	Wire Crimper	YY-024	.....	.....	.....	.....	ZYY 024001
	Wire Crimper	YY-025	.....	.....	.....	.....	ZYY 025001
	Snag Bushing	YY-027	.....	.....	.....	.....	ZYY 027001
	Alumina	YY-026	.....	.....	.....	.....	ZYY 026001
	Tight Bush	YY-036	.....	.....	.....	.....	ZYY 036001
	Relay Hook Pin	YY-046	.....	.....	.....	.....	ZYY 046001
	Wire Crimper	YY-047	.....	.....	.....	.....	ZYY 047001
	Read Crimper	YY-048	.....	.....	.....	.....	ZYY 048001
	Seal	YY-050	.....	.....	.....	.....	ZYY 050001
	Forming Jumper Wire	YY-052 1)mm	.....	.....	.....	.....	ZYY 052003
	Forming Jumper Wire	YY-052 12.5mm	.....	.....	.....	.....	ZYY 052004
	Forming Jumper Wire	YY-052 13mm	.....	.....	.....	.....	ZYY 052005
	AC Code	WZ-302	.....	.....	.....	.....	WMZ Y022001
	DC Code	WZ-334	.....	.....	.....	.....	WMZ Y034088
	Chassis	SPCC=1.2 ZMC	.....	.....	.....	.....	MDBP 103980
	Front Chassis	SPCC=1.0 ZMC-3	.....	.....	.....	.....	MDBC204513
	Connector Holder	SPCC=1.0	.....	.....	.....	.....	MDBC404514
	Meter Holder	SPCC=1.0	.....	.....	.....	.....	MDBC404515
	Bonnet	t=1 Block	.....	.....	.....	.....	MDBC203984
	Holder for Bracket	t=1.0	.....	.....	.....	.....	MDBC403038
	Bottom Board	SPCC=1.0 ZMC-3	.....	.....	.....	.....	MDBC204179
	Back Panel	SPCC=1.0 ZMC-3	.....	.....	.....	.....	MDBC204527
	Lamp Holder	SPCC=1.1 ZMC-3	.....	.....	.....	.....	MDBC404516
	Panel Holder (Right)	SPCC=1.0 ZMC-3	.....	.....	.....	.....	MDBP 404083
	Panel Holder (Left)	SPCC=1.0 ZMC-3	.....	.....	.....	.....	MDBP 404084

DESCRIPTION PART NO.

MISCELLANEOUS (Continued)

Heat Sink	ALPt=2.0	.....	MDBP 304132
Heat Sink	ALPt=2.0	.....	MDBP 303968
Heat Sink	ALPt=2.0	.....	MDMP404558
Trans Holder	SPCCt=1.6 ZMC-3	.....	MDBP 400683
Shield Board	SPTt=0.6	.....	MDBP 403969
Shield Board	SPTt=0.6	.....	MDBP 403970
Shield Board	SPTt=0.35	.....	MDBP 402163
Mike Hanger	SPCCt=1.0 Ni-3	.....	MDBP 402919
Holder for Speaker	SPCCt=0.8 ZMC-3	.....	MCBP 400038
Front Panel	ABS Cri Black	.....	MDMP104517
Channel Knob	ABS Cri Black	.....	MDMP404501
Knob	ABS Cri Black	.....	MDMP404502
Poly Bushing		.....	MDMP400085
LED CAP		.....	MDMP402877
Control Plate	Alpt=1.0	.....	MDNP304518
Brand Plate	Alpt=0.5	.....	MDNP304519
FCC Plate	Alpt=1.0	.....	MDNP404520
Warning Label		.....	MDLP 402800
Transmitter Card		.....	MDLP 402178
Serial NO Label		.....	MDLP 402730
Production NO Seal		.....	MDLP 403866
Display Box		.....	MDAP 404521
Digital Window		.....	MDAP 404522
Fiber Washer	Fiber t=0.8 Black	.....	MDZP 403955
Bake Washer		.....	MDZP 400086
Wool Tac	10x150x0.3t Black	.....	MDZP 403865
Wool Tac	10x190x0.3t Black	.....	MDZP 402080
Wool Tac	10x330x0.3t Black	.....	MDZP 402400
Insulation Board		.....	MDZP 402724
Protection Cover for Panel		.....	MDZP 404523
Cushion		.....	MDZP 404131
Cushion		.....	MDZP 404173
Pan Head Screw	M3x6 Poly	.....	MZSS 123006
Screw	M3x6 Ni	.....	MZSS 133006
+Bind Screw	M2.6x8 Ni	.....	MZSN 192608
+Bind Screw	M3x6 Ni	.....	MZSN 193006
+Bind Screw	M3x8 Black Ni	.....	MZSB 193008
+Bind Screw	M3x10 Ni	.....	MZSN 193010
+Bind Screw	M4x10 Ni	.....	MZSN 194010
+Bind Screw	M5x8 Ni	.....	MZSN 195008
+Bind Tap Tight	M3x6 (ZMC)	.....	MZSZ 343006
+Bind Tap Tight	M3x8 (ZMC)	.....	MZSZ 343008
+Bind Tap Tight	M3x12 (ZMC)	.....	MZSZ 343012
+Bind Tap Tight	M3x14 (ZMC)	.....	MZSZ 343014
+Tapping Screw	M3.5x8 (ZMC)	.....	MZSZ 293508
Styroform		.....	MDPP 204101
Accessory Box		.....	MDPP 403046
Display Box		.....	MDPP 304524
Protection Board		.....	MDPP 404525
Hexagon Nut	M2.6 (NI)	.....	MZSN 430026
Hexagon Nut	M3 (NI)	.....	MZSN 430030
Flange Nut	M4 (NI)	.....	MZSZ 480040
Spring Washer	3 (NI)	.....	MZSN 520030
Lugged Washer	3.5 (NI)	.....	MZSZ 530035
Rubber Foot	2.6x30 ABS Black	.....	MZTT 010001

OR ROBYN SB-520D



NOTE:
 1. ALL RESISTORS IN OHM /SW UNLESS OTHERWISE NOTED.
 2. ALL CAPACITORS IN MICROFARAD YA OR YB UNLESS OTHERWISE NOTED.